FEEDSTUFFS®

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 30—Number 46 NOVEMBER 15, 1958 1 Year $5, 2 Years $8

Drop in Broiler, Egg Prices Seen By USDA for '59

WASHINGTON — Greater production and lower prices for broilers and eggs are predicted for 1959 in the U.S. Department of Agriculture poultry and egg report.

The report said that supplies of poultry meat will probably continue to increase in 1959, but at a slower rate than in 1958 when broiler production rose about 15% from the year before.

Egg production in 1959 will probably exceed 1958 and reach record levels, but the concurrent increase in population will hold per capita production at near the 1958 level.

Average prices to farmers for both broilers and eggs in 1959 are likely to be below 1958, and 1959 gross income from poultry production enterprises probably will fall below both 1958 and the $3.9 billion peaks of 1951 and 1953.

Until at least the middle of 1959, the large prospective supply of hatching eggs will be an important influence in larger broiler production. For the year as a whole, the organization of the industry which encourages volume output will tend to keep output high.

Broiler prices in 1959 are likely to be lower than the 18¢ lb. average estimated for 1958. Prices in early 1958 were sustained by reduced and delayed marketings caused by adverse growing conditions early in the year, and by the high prices for red meats. Increases in broiler production after midyear resulted in lower

(Turn to POULTRY PRICES, page 113)

Oscar Straube Dies at 58

KANSAS CITY — Oscar Straube, prominent feed industry executive and president of Pay Way Feed Mills, Inc., Kansas City, died suddenly Nov. 12. He was 58 years old.

Mr. Straube had attended a meeting of the Feed Production School at the American Royal Building in Kansas City and had returned to his home about 9:30 p.m. He suffered a heart attack a few minutes later.

Immediate past chairman of the American Feed Manufacturers Assn., Mr. Straube had been a member of the association board for more than 20 years and was widely acquainted in the feed industry through extensive traveling and speaking at various industry gatherings.

A man of great personal charm,

(Turn to STRAUBE, page 6)

Keeping Pace with Industry Changes, Trends Emphasized At Midwest Production School

By ROGER BERGLUND
Feedstuffs Managing Editor

KANSAS CITY — An increasing awareness among feed men of the need to keep pace with rapid agricultural and industry changes—not only in sales and nutrition but also in the actual mechanics of production and handling—was brought out this week in Kansas City.

The awareness of new problems and opportunities in mill and distribution operations was reflected in a record attendance of some 900 feed men at the Feed Production School. This 9th annual event, held Nov. 12-14 at the big American Royal Building in Kansas City, attracted persons from 44 states, plus Canada and Venezuela.

The school, sponsored by the Midwest Feed Manufacturers Assn., added further emphasis to such points as these . . .

- Mechanization, automation and labor-saving measures continue to increase as a competitive industry seeks to adjust itself to the fast-paced changes both internally and in the market it serves.
- Production men as well as management and sales personnel recognize that they must keep their operations in tune with these times of changes in feed marketing.
- Machinery, equipment and supply firms continue to come up with new developments in response to the needs and demands of an industry which faces day-to-day challenges in increasing efficiency and reducing costs.
- Efficiency continues to gain in both manufacturing and handling of feed. As one speaker put it, production men now think not just in terms of man-hours per ton but in terms of tons per man-hour. Plant labor requirements of ½ to ¾ man-hour per ton are not now uncommon.
- Production of complete feeds, in pellet form and handling in bulk from mill to feedlot, is likely to continue to go ahead rapidly.
- There are both real problems yet to be solved and real opportunities in connection with bulk handling and distribution of finished feeds.
- Interest in smaller, local mills and distributing stations continues

(Turn to MIDWEST, page 112)

National Swine Industry Conference Speakers Outline "Futuramic" Goals

By DR. J. H. CONRAD
Purdue University

LAFAYETTE, IND.—Over 400 industry representatives from 24 states met in a recent two-day session at Purdue University to take a look into the future and discuss "Where Are We Headed" in the swine industry.

Sponsored by 24 interested organizations, the meeting was concerned with several different segments of the industry: swine breeding and reproduction; swine nutrition; diseases and other losses in swine; management systems in swine production; the consumer market for pork; merchandising pork products, and the marketing of live hogs.

Breeding

Dr. J. C. Hillier, Oklahoma State University swine breeding specialist, related that future goals in breeding might well be a pig that has a 30-in. carcass with .3 in. of backfat, an 8-in. loin eye and a yield of lean cuts amounting to about 48% of the liveweight. He said this could be accomplished by taking advantage of those traits which are highly heritable—

(Turn to SWINE CONFERENCE, page 8)

700 Attend Cornell Nutrition Meeting

By GEORGE L. GATES
Editor of Feedstuffs

BUFFALO, N.Y.—Two solid days devoted to reviews of recent animal and poultry nutrition research attracted the attention of more than 700 feed men and college scientists at the Cornell Nutrition Conference held Nov. 13-14 at the Hotel Statler in Buffalo.

Discussions covered the broad range of topics of greatest current interest among nutritionists, and in addition a portion of the program branched out into matters of more general industry interest. (Research papers are summarized on page 10).

On hand to present an appraisal of the business climate for the next 10 years was veteran feed man James A. McConnell, Mansfield, Pa., formerly a G.L.F. Mills, Inc., executive and more recently a government official and advisor. During his career he has served as director of the Commodity Stabilization Service, assistant secretary of agriculture, director of the American Feed Manufacturers Assn. and chairman of the Feed Industry Council.

How the Nutrition Council of the AFMA serves as "the third corner of the triangle" in coordinating experiment station research with feed industry operations was described by Dr. E. I. Robertson, John W. Eshelman & Sons, Lancaster, Pa., chairman of the nutrition council. The AFMA co-sponsors the Cornell conference.

Research reports covered studies of amino acids, vitamin and mineral requirements of farm animals, and experiments involving pelleting and the addition of fat to rations.

"Business management must give a great deal of thought, and probably an increasing amount of time, to the kind of political and economic climate in which it operates and makes decisions," Mr. McConnell said.

More Government

Two strong underlying trends are bringing about a swing toward the use of more and more government in handling affairs formerly in the field of private enterprise, the speaker said. These are: Very fast popu-

(Turn to CORNELL, page 113)

FEEDSTUFFS *Features This Week*

LABOR COSTS: A report on an eight-state survey of feed men provides suggestions for improving efficiency. See **page 18.**

NUTRITION: Florida researchers report on trials involving methionine supplementation of laying hen feeds on **page 22.** Research on methods of adding fat to poultry rations is reported on **page 38.**

TURKEY TRENDS: Likely future developments in the turkey industry are outlined on **page 44.**

— REGULAR FEATURES —

Putting Research to Work	42	Worth Looking Into	94
Feed Service Bulletin Board	50	Joe Brooks	98
Convention Calendar	90	Feed Markets in Detail	110

Charles N. Dannals, Jr., Named to AFMA Board

CHICAGO—Charles N. Dannals, Jr., president of Atlanta Milling Co., Atlanta, Ga., has been elected to the board of directors of American Feed Manufacturers Assn. Mr. Dannals will complete the unexpired term of Sherm Applebaum, Athens Milling Co. The announcement was made by W. E. Glennon, AFMA president, following action taken by the AFMA board at a recent meeting.

Mr. Dannals spent two years with Southern Gold Medal Flour Co. (an affiliate of General Mills) and then joined Atlanta Milling Co. 23 years ago as a plant superintendent. Subsequently, he was named secretary, treasurer, vice president and then president. Active in industry affairs, he is president and director of the Georgia Feed Assn., a director of the Georgia Poultry Federation, a member and treasurer of the Georgia Egg Industry Committee, a member of the Georgia 4-H Advisory Committee, and chairman of the Georgia Poultry Princess Banquet Committee of 1959.

FEEDSTUFFS®

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
Address Mail to:
Box 67, Minneapolis 40, Minn.
Telephone FRanklin 4-5200
All Offices Serviced by Bell System Teletype

EDITORIAL STAFF—George L. Gates, Editor; Roger Bergland, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants; Duane F. McKenzie, Research Director.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald G. Neth, Secretary; T. A. Gaden, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard L. Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1005 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $5, two years $8, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-8. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the southeastern states

Oscar Straube . . . Industry Leader

THE FEED INDUSTRY has every reason for pride in claiming as one of its members Oscar Straube, whose sudden death occurred this week. For Mr. Straube displayed in his life the individualism and strength of character which we feel is somehow a basic part of the feed industry.

It is an industry which has grown from small beginnings to a position of economic importance, not through the discovery of some great natural resource or some important basic invention, but rather through the efforts of individuals working in a free enterprise system to create a product and a service in which they had faith.

Mr. Straube spent his lifetime in the feed industry, starting as a retail dealer in Arkansas, later becoming a salesman for a small feed manufacturing business which he helped to build into a large one, before founding his own company which in turn prospered under his direction. And that career has been a segment, with many others like it, in creating today's important feed industry.

Such men naturally participate whole-heartedly in any industry endeavor, and, throughout his lifetime, Mr. Straube was active in association affairs. For more than 20 years he was a board member of the American Feed Manufacturers Assn., and his term as chairman happily coincided with the initiation of the national organization's golden anniversary year.

IN THE MIDWEST AREA Mr. Straube was active too in the work of the Midwest Feed Manufacturers Assn. and never failed when called upon for some special assignment in industry promotion. The feed industry can be proud of him, too, because he carried that same spirit of helpfulness into extensive community work in his home town of Kansas City.

In his report as chairman of the American Feed Manufacturers Assn. golden anniversary, Mr. Straube said . . . "Great are the opportunities which lie ahead of this young and virile industry. I believe the feed manufacturer and the feed dealer both have important work to do, and shall remain a dominant part in livestock and poultry production for many years to come."

All men must die, but we hope that such faith and confidence will always live in the feed industry.

Today's Milk Production

AN INTERESTING COMPILATION of figures about our friend the dairy cow and all her sisters, appearing in the current Dairy Situation report, emphasizes the improvements being made by dairymen in their methods of operation. The report also points the way toward prospects for even greater progress toward getting maximum production of milk and cream.

For several decades, the report relates, average production of milk per cow in the U.S. has increased substantially. Although the number of milk cows in 1958 is about one fourth smaller than at the peak level in 1944, total milk production this year will be 7% greater. In recent years, the increase in production per cow was sufficient to bring about the establishment of five successive record levels of total milk production, even though milk cow numbers declined every year except 1953.

In 1958 the rate per cow increased to about 6,280 lb. per animal, compared with 6,162 in 1957 and 6,004 in 1956. The increase was not quite sufficient to offset the 3½% reduction in cow numbers, and total milk production in 1958 will fall slightly short of the production level established in 1957.

WHY HAS IT BEEN POSSIBLE to step up individual production performance of dairy cattle? Dairy Situation answers the question this way: "The uptrend in output over the years has been the composite result of selecting animals of superior production potential and supplying them with increased quantities of nutrients, thus causing them to produce increased quantities of milk. Expansion in production potential has been made possible by the widespread use of artificial insemination, and of bulls with ability to transmit superior production potential to their offspring."

The report goes on to explain that increased quantities of nutrients have been supplied partly through increased quantities of concentrates fed per head and partly through increased quantities and improved qualities of roughages. "Over a 10-year period ending in 1956 it appears from data collected from farmers that the increase in quantity of concentrates fed per cow has been sufficient to account for nearly two thirds of the gain in output of milk per cow from the larger cow. The remaining one third was supplied largely through roughages."

Early concentrate feeding estimates are not available, the estimated amount fed per cow in 1942 was 1,200 lb. This compares with more than a ton per cow each year at present.

THE EMPHASIS PLACED IN THIS REPORT on the importance of improved feeding of dairy cattle certainly is not misplaced. However, those closest to the problems of dairy nutrition recognize that much more remains to be learned about feeding of ruminants than is already known about feeding of some other classes of livestock and poultry. Dr. C. F. Huffman, Michigan State University dairy expert, just recently (Feedstuffs, Oct. 18) singled out the most pressing problem in dairy nutrition: Why does a pound of TDN (total digestible nutrients) in concentrates produce more milk than an equal amount of roughages? Until this problem is solved, Dr. Huffman comments, "the feeding of dairy cattle will be more of an art than a science."

With the help of artificial rumens, radioactive tracers and other new devices, dairy nutrition scientists are getting closer to answers to some of the riddles and it is possible that before too many years have passed much more will be understood about ruminant nutrition.

Meanwhile, there is much to be done with knowledge already available, whether it be art or science. The prevailing level of milk production per cow of about 6,300 lb. is considerably below the upper production levels already widely obtained.

A SIGNIFICANT NUMBER of dairy herds within the Dairy Herd Improvement Associations now produce an average of more than 15,000 lb. of milk per cow. In 1957, the U.S. Department of Agriculture reports, average production for all cows within DHIA was over 9,000 lb., roughly 50% above the U.S. average for all cows. At the same time, the annual rate of increase for DHIA cows has been nearly as high as for the average of all cows in the country and higher than the average for a number of states.

There has been a steady rise in herd enrollments within the DHIA program, and most of the herds added would be expected to have a lower rate per cow than those already enrolled. These observations suggest, according to the Dairy Situation, that the rate of production per cow may increase even more rapidly in the future than in the recent past, at least until the average for the country as a whole reaches a much higher level. There is certainly an opportunity for the feed industry to help dairymen in their efforts to achieve more efficient production and higher incomes.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed business held about steady over the nation this week with reduced demand in some areas about cancelled out by increases in others. Dairy and cattle feeds were showing seasonal increases although there was a slowdown in some areas of the Midwest. Reduced production of some feed ingredients and exports of certain feeds combined to tighten supplies and move prices upward. Some resistance to the price increase is in prospect, but it is expected to be temporary because of returning cold weather and the hand-to-mouth buying of feeds which has occurred this fall. The wholesale feedstuff price index moved up to 80.4 this week, compared with 77.9 last week and 72 a year ago. The feed grain index climbed to 61.8 as against 61 the week before and 64.9 last year. (Ingredient prices in detail on pages 110-112.)

Northwest

Although feed business continued to be rather spotty this week, there were indications that demand generally is growing slightly. Reports by mill representatives on the state of their businesses ranged from "dull" to "very good." One mill reported "easily the best November to date we have had."

Beef and dairy feed movement appears to be under way in earnest, and a very sharp pickup is expected when snow covers the ground. Forward bookings are improving, but most dealers appear to be operating hand-to-mouth.

There may be some resistance during the coming week, however, to increases which will result from the rising oilseed meal and millfeeds prices.

Movement of hog feeds has been fair to good, and egg feeds are in good volume. Turkey feeds have now fallen off to "a trickle."

Southwest

Formula feed business in the Southwest is going along at about the same pace as it has been. Several mills report a reduction in operating time this week, but the main reason is that they have virtually caught up with cattle feed bookings which have kept them busier than usual for a number of weeks. Most mills are operating five days, normal shifts, with a day or two backlog going into next week.

Swine feeds are in excellent demand, as they have been for many months now. The feeding ratio is good and there are large numbers of hogs in the area.

Laying rations are moving well for those companies actively seeking this business or with special contact programs. Turkey feed has faded and is now not too great a factor in the over-all business picture. Some breeder feed is moving, and there are still

(Turn to MARKETS, page 114)

our service and products help you produce

BETTER FEEDS

Peter Hand Research Farm

- **Progressive nutritional research**
- **Practical farm testing and evaluation**

The often-dramatic new developments of science hold the answers to many of your practical problems. Yet, most feed nutritionists and manufacturers simply do not have the time and facilities to test and evaluate all these discoveries for themselves. Today, Peter Hand can greatly expand your testing program and expedite your evaluation of these new developments.

The Peter Hand Foundation acts as your clearing house on nutritional developments. We study and develop formulas and products for you, based on work at our own research farm and laboratory, and upon latest findings from universities. Current research results from all sources are evaluated by the Foundation staff. These developments are then further studied under practical conditions at our applied research farm.

Consider The Peter Hand Foundation as part of *your own* research program, ready to serve you now!

Check the products that interest you and mail this coupon now. We will be happy to send you full information.

PETER HAND FOUNDATION

Division Peter Hand Brewery Co. © 1958 P.H.B. Co. Dept. F-11-15

1000 W. North Ave., Chicago 22, Ill. • MOhawk 4-6300

- ☐ **Peter Hand FW-Premixes** (Vitamins-Antibiotics-Unidentified Growth Factors)
- ☐ **Peter Hand Proven Premixes** (5 and 10 lb. batch size)
- ☐ **Peter Hand Aqua Solva**— Water Soluble Vitamins and Antibiotics
- ☐ **P.H. Vitamin A**
- ☐ **P.H. Vitamin D_2**
- ☐ **P.H. Vitamin D_3**
- ☐ **P.H. Vitamin E**
- ☐ **P.H. Riboflavin**
- ☐ **P.H. Pantothenic Acid**
- ☐ **P.H. Choline Chloride**
- ☐ **P.H. Komplex K**
- ☐ **P.H. Vitamin B_{12}**
- ☐ **P.H. Pepsin**
- ☐ **P.H. Arsanilic Acid**
- ☐ **P.H. Procaine Penicillin**
- ☐ **P.H. Bacitracin**
- ☐ **B.H.T.** (Koppers)
- ☐ **Methionine** (Du Pont)
- ☐ **Lipamone** (White Laboratories)
- ☐ **Rumen Microorganisms** (Natural and cultured)
- ☐ **GP 101 with Multiferm** (Unidentified Growth Factors)
- ☐ **Custom Premixes** (To your exacting specifications)

Peter Hand Foundation, 1000 W. North Ave., Chicago 22, Ill.

Please send information on the items checked above to:

NAME ..... TITLE .....

COMPANY NAME .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

Florida Nutrition Conference Combined with Trip to Nassau

MIAMI, FLA.—Gene McKoy, John W. Eshelman & Sons representative in Tampa, Fla., was chosen president of the Florida Feed Dealers Assn. at the group's business session aboard the SS Florida returning from Nassau. All sessions of the recent 1959 Florida Animal Nutrition Conference were held aboard the ship which took the group to Nassau for a combination of business and pleasure.

Mr. McKoy succeeds Frazier V. Rogers, General Mills, Inc., Tampa. Serving with him will be T. P. Shields, Jackson Grain Co., Tampa, vice president; Russell J. Godwin, Florida Feed Mills, Jacksonville, secretary, and Rogers E. Eikenberry, General Mills, Inc., Coral Gables, treasurer.

New directors include Julian Smith, Flint River Mills, Tallahassee; Keith Morgan, Jackson Grain Co., Tampa; Leonard Banks, Broward Grain Co., Boynton Beach; Lawrence W. Howard, Howard Feed Mills, Jacksonville; Jim Barnhart, Early & Daniel Co., Tampa; G. Raymond Wolfe, Ralston Purina Co., Tampa; Harry T. Mills, the Quaker Oats Co., Tampa, and William D. C. Robinson, Security Mills, Jacksonville.

Three program sessions were held, one before leaving Miami, one en route and the third at Nassau. Dr. R. M. Bethke, Ralston Purina, Dr. Wid P. Crawford, Chas. Pfizer & Co., Inc., and Ralph McCall, the Quaker Oats Co., were the only out-of-state speakers. Other participants were from the University of Florida Agricultural Experiment Station which co-sponsored the conference.

Experiments with Swine

The long-held precept that fattening swine need tankage or other animal protein in their rations seems to be disproved by results of research reported by Dr. George E. Combs, Jr., animal husbandry staff of the Florida experiment station. "It is evident that the feeding of an animal protein or a mixture of plant and animal protein is no longer a nutritional necessity," he said.

It has been found relatively recently that soybean meal in combination with corn fortified with minerals and vitamins forms a palatable and apparently a nutritionally adequate ration.

"When factors such as the amino acid composition of the protein concentrate, farm grains and cost of palatability of protein concentrate are considered, it is difficult to conclude which type of supplement is most rewarding to both the feed dealer and the swine producer," Dr. Combs concluded.

Dr. J. T. McCall, also of the Florida station staff, suggested that the dietary level of protein be increased as a protective measure when copper or any other heavy mineral in excessive amounts is included in the diet of swine.

"Probably the most significant recent advancement with swine is confinement feeding," declared Dr. H. D. Wallace of the Florida station. "A need for more efficiency in pork production is demanding this change. Pasture is no longer nutritionally essential. There is little reason to expect anything but continued shifting from pasture to concrete."

This development promises to have far-reaching effects both at the farm and at the feed mill, as Dr. Wallace sees it. Highly efficient, economical, tailor-made rations will be needed. He thinks the feed manufacturer may find that certain expensive all-purpose formulations can and should be replaced by rations designed for specific uses on the concrete slab.

The animal husbandman added that recent experiments at the Florida station have shown that continued low-level feeding of piperazine phosphate promotes more rapid gains in growing pigs.

Poultry Feeding

Addition of methionine hydroxy analogue (MHA) to any of three basal diets improved egg production and feed efficiency, it was reported by Dr. R. H. Harms of the Florida station. Best rate of egg production (70% for 11 months) and feed utilization was obtained from feeding the diet containing 14.7% protein supplemented with MHA. The basal diets contained 14.7, 15.7 and 16.7% protein, with and without the addition of .075% MHA.

Dr. Bethke pointed out that by far the largest percent of fats and oils currently consumed by the feed industry is used in poultry feeds, with broiler feeds accounting for the major share. Experiment station and industry research has shown that inedible fats have an economic place in certain poultry rations.

However, in livestock feeds, the use of fats and oils is restricted to special feeds such as milk replacers, pig starters, etc. Most experiments have shown that the addition of fat to the ration improves feed efficiency, whether with or without improvement in rate of gain. But a number of these experiments have shown no economic advantage of including fat in the ration, according to Dr. Bethke.

"It would appear that more consideration needs to be given to energy-protein, energy-mineral and energy-vitamin relationships before we have a complete economic use answer," he said.

He pointed to an urgent need for definitions and standards for fats and oils suitable for animal feeds, with emphasis on quality.

Ralph McCall declared that the use of pelleted rations is the most popular recent feeding development, particularly pelleting roughages. Pellets improve gains and feed conversions and can save labor through self-feeding. "If pelleting can be done economically, it will provide a tremendous new market for manufactured feed," he said.

"Florida feed men can render considerable service to dairymen by advising them to use good quality leafy forages—pasture, silage and hay—in adequate amounts when they have a problem of low butterfat," said Dr. R. B. Becker, of the Florida station. "Feed men should recommend feeds high in productive energy when the problem is low solids-not-fat in the milk."

Minerals and Antibiotics

Tranquilizers have enhanced growth when fed alone and in conjunction with stilbestrol or antibiotics, it was stated in a paper prepared by Pfizer's Ralph P. Soule, Jr., and presented by his co-worker, Dr. Crawford.

He said a new antibiotic, oleandomycin, has shown considerable value as a growth promotant for poultry, surpassing present results with penicillin. Preliminary studies have shown positive results also with swine, cattle and lambs.

"Cobalt and iodine are required in such small amounts that deficiencies of these elements are constantly confused with other conditions," declared Dr. George K. Davis of the Florida station. He recommended that cobalt be a constant supplement under practically all Florida conditions, but said there seems to be little justification for including iodine.

FLORIDA CONFERENCE—Relaxing in the conference room aboard the SS Florida are several of the Florida Nutrition Conference speakers. They are (seated, left to right): Dr. S. P. Marshall; Ralph McCall, Quaker Oats Co.; Dr. R. M. Bethke, Ralston Purina; Dr. H. D. Wallace and Dr. George K. Davis. Standing is Dr. H. L. Chapman. (Speakers shown are from the Florida experiment station except where otherwise indicated.) The SS Florida transported those attending the conference from Miami to Nassau, and served as the meeting place for the conference.

W. T. Diamond

ELECTED DIRECTOR—W. T. Diamond, secretary-treasurer of the American Feed Manufacturers Assn., Chicago, was elected to the board of directors of the National Dairy Shrine. The Shrine owns and operates a headquarters in Waterloo, Iowa, and was organized for the purpose of "stimulating, inspiring, educating and recording" leadership accomplishments in the dairy field. Mr. Diamond was a dairy cattle judge, a coach of state (in Iowa) and national 4-H dairy teams, field secretary of the Iowa State Dairy Assn. and national fieldman of the Holstein-Friesian Assn. of America.

SUFFERS FIRE LOSSES

MADERA, CAL.—The storage shed and boiler building of the James Grain Co. here were destroyed by fire recently. No estimate of the loss in buildings, equipment or grain in storage was given.

Feed Men Hear Talk On Relationships of Dealers, Manufacturers

DAVIS, W. VA. — Robert F. McLeod discussed past, present and future aspects of dealer-manufacturer relationships in a talk before the West Virginia Feed Dealers Assn. at Davis recently. The subject of his address was "The Future of Feed Distribution in Feed Grain Deficit Areas." Mr. McLeod is president of Wirthmore Feeds, Inc., Waltham, Mass.

"The feed industry has a great responsibility in the future of the poultry industry," the feed executive said. "I am sure it will accept this responsibility, even though it may require many changes and what may appear to be drastic action at times.

"We hear a great deal today about agribusiness and poultry operations run as corporations. We in the feed industry continue to have a responsibility to individuals as well as to corporations with specialized or diversified interests in hatcheries, breeders, layers, broilers or turkeys. Changes must come, but they must be based on accurate knowledge and sound judgment, with an eye to the future well-being of the poultry industry as a whole."

In summing up his remarks about the part that feed dealers can expect to play in today's rapidly expanding, highly competitive poultry industry, Mr. McLeod said, "Feed will be delivered in bulk, at least 75% of it. We will have highly specialized feed dealers with bulk facilities or access to them. Other dealers will become diversified and will carry equipment, hardware and building supplies. Some dealers will become a part of an integrated program. New dealers will be the result of integrated operations which control a volume of feed business. Many dealers will have poultry operations that will represent a major portion of their feed business and income.

"Major feed companies will make bulk feed handling facilities and warehousing available to dealers in concentrated poultry areas. Smaller mills, with bulk feed handling facilities, will be the trend of major feed manufacturers.

"These changes are all a part of progress. We must accept our share of responsibility and adjust our business to these changes. Poultrymen must remain competitive if the poultry industry is to continue to grow and prosper. We, in the feed industry, must do our part to see that this competitive position is maintained."

Denver Club Schedules Annual Dinner-Dance

DENVER — The Denver Feed & Grain Club has scheduled its annual dinner-dance at the new Petroleum Club Nov. 22. Everyone in the Colorado grain or allied trades is invited to attend.

Requests for tickets at $5 a person may be sent to the Colorado Grain, Miling & Feed Dealers Assn. here or to Bill Hutchings at the Denver Grain Exchange, 701 Cooper Building, Denver.

MANEY BROS.
MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

SMALL'S
DEHYDRATED ALFALFA
"For Feeds with a Future"
Archer-Daniels-Midland Co.
Alfalfa Division
P. O. Box 356 • Kansas City, Mo.

CITY..... ZONE..... STATE.....

"the buy is BACIFERM®"

"who says so?"

MARITIME DOES!

"We're sold on Baciferm," says Dr. L. N. Gilmore, Director of Research, Maritime Milling Co., Inc., Buffalo, N.Y. "Our own field trials corroborate the various college test data submitted to us—only 4 grams of Baciferm's zinc bacitracin per ton does an outstanding job in stimulating growth. We're now using Baciferm in our low-level broiler feeds. And it's going into our high-level 'Stress-Aid' feeds, too, because we find we get better results with furazolidone and tetracycline in combination with Baciferm than we had previously. One other thing – we are impressed with the stability of the zinc form of bacitracin which we understand is an exclusive, patented feature of Baciferm. It's good storage insurance for us and assures that full value is delivered to our customers."

CSC

ANIMAL NUTRITION DEPARTMENT

COMMERCIAL SOLVENTS CORPORATION, 260 MADISON AVE., NEW YORK 16

IN MEXICO: Comsolmex, S.A., Mexico 7, D.F. CANADIAN SALES REPRESENTATIVE: Norman Stark

BACIFERM HELPS MARITIME MAKE THE SALE!

Zinc Bacitracin Antibiotic Supplements

Illinois Feed Convention Deals With Human Relations, Sales

By DON E. ROGERS
Feedstuffs Staff

SPRINGFIELD, ILL. — Over 800 delegates to the annual convention of the Illinois Feed Assn., held jointly with the Illinois Poultry & Hatchery Federation (formerly the Illinois Poultry Improvement Assn., Feedstuffs Nov. 8, page 8), Nov. 5-6 heard a program designed around the theme "Good Human Relations Make Sales."

The afternoons of both days were devoted to a sales training clinic conducted by Byron Lopp, authority on sales and human relations, Denver, Colo.

Jerry Sotola, associate director, livestock bureau, Armour & Co., Chicago, told the audience that feed men should study the meat supply patterns because matching the right feeds to the type of livestock is important. "The livestock men will tell you that producing what the market does not want means they will be punished," he said.

"There is more emphasis on lean meat and, of course, proper nutrition, coupled with proper breeding, are the basic factors in producing what the housewife wants.

"Livestock is marketed at younger ages, when their nutritional requirements are quite complicated and quite exacting, especially as to protein, vitamin and mineral requirements. Utmost skill in applying the latest nutritional knowledge is demanded. Selling feeds in cube form has aided scientific thinking over barnyard thinking in feed formulation, but there still is a wide gap between what we know and what we practice.

"Juiciness, tenderness and flavor are qualities in meat well known, but most of the market classes and grades of meat which are based on conformation, quality and finish ignore these. Some feed men attach too much importance to the simple chemical analysis of a feed or a feed formula. Tests with live animals are of utmost importance, because we can take an old shoe and a rug, and smear them with lard and the mixture, when frozen, ground and analyzed, will contain 20% protein, 5% fat and 12% fiber. Of course, we know that cattle would lose weight on such a ration."

Alvin Lovekamp, U&L Grain Co., New Berlin, Ill., retiring president, summarized the activities of the feed association during the past year. He reported that a new public relations service to Illinois newspapers has been inaugurated. This service consists of weekly news releases covering nutritional and management developments prepared by Charles W. Sanders of the Chicago office of the IFA. It was reported that 54 newspapers in the state have used the service.

Feed dealers were urged to discuss the free news service with their local editors and request them to use the material as a part of an over-all public relations program.

Public Relations Tools

Mr. Lovekamp enumerated several other tools dealers may effectively use in building a successful public relations program in their communities. Some of them included: (1) working with local and county fairs; (2) permitting various groups to use store windows for their promotional programs; (3) participating in parades and other civic events; (4) using a consistent advertising program; (5) attending field days with customers, and (6) working with local youth groups.

"Your survival and growth as a feed dealer will depend on your ability to not only merchandise quality products at the right prices, but also on your ability to understand and work with your customers and your community," Mr. Lovekamp said.

Garland Benton, Southern States Grain Marketing Cooperative, Richmond, Va., emphasized the importance of customer relations in the suc-

(Turn to ILLINOIS, page 114)

Buyers' Handbook Offered by AFMA

CHICAGO — The 1959 American Feed Manufacturers Assn. Feed Ingredient Purchasing & Trade Rules Guide, compiled and published by AFMA in collaboration with 13 national allied industry associations, is now available.

A practical, fully indexed 6 by 9-in. loose leaf handbook, it contains complete trade and arbitration rules of Grain & Feed Dealers National Assn.; American Dehydrators Assn.; National Cottonseed Products Assn., and the National Soybean Processors Assn.

Also included are feed ingredient purchasing guides established during the past three years by the AFMA Nutrition Council and the AFMA Committee of Purchasing Agents. These supply a uniform basis for the preparation of procurement specifications for a variety of ingredients including alfalfa products, animal by-products, distillers by-products, cottonseed products, marine by-products, milk products and the like. There are also indexed sections for 14 major commodity products.

Postpaid shipments will begin in December at the cost of $6 per copy to members and $10 to non-members.

As new purchasing guides are established, and as improved methods of judging quality cause existing guides to come up for revision, AFMA will publish these in standard, three-hole-punched, loose-leaf form for distribution to holders of the handbook.

NEW OFFICERS—Ivan Miller (left), Crawford County Farmers Exchange, Robinson, Ill., was elected president of the Illinois Feed Assn. at the annual convention in Springfield Nov. 5-6. Other officers elected are (left to right): Dan Teefey, Teefey Feed Co., Mt. Sterling, Ill., vice president; Dean M. Clark, Chicago, executive secretary, and Robert Pevahouse, Archer-Daniels-Midland Co., Springfield, treasurer.

FEED MAN FINANCES NEW MONUMENT

OKLAHOMA CITY — B. D. Eddie, president of Superior Feed Mills, Oklahoma City, has presented to the Oklahoma City Chamber of Commerce $40,000 to construct a monument in memory of the pioneers and 89ers of Oklahoma. The monument will be one of three planned for the $100,000 beautification project underway in downtown Oklahoma City. A native of Louisiana, Mr. Eddie has been a resident of Oklahoma City for 50 years and has been active in civic and church affairs. He has served as chairman of the United Fund, worked on various committees of the Chamber of Commerce, and has been associated with the YMCA, Oklahoma Medical Research Foundation, Frontiers of Science, St. Anthony Hospital, Oklahoma City University and American University in Beirut.

Oilseed Meal Futures Prices Move Higher

MEMPHIS—Oilseed meal futures were mostly higher on the Memphis Board of Trade during the past week as activity gained sharply, with trade interests shifting hedges forward and speculative accounts good buyers of nearby January.

The expanded activity was viewed as a natural result of greater trade in the Memphis territory.

A good demand was reported for cash oil meal part of the period, Nov. 12, cottonseed oil meal demand was light and soybean oil meal fair.

Futures prices took a drop at the end of the period, following grains down, with soybean meal moving up.

Unrestricted soybean oil meal closed Nov. 12 25¢ lower to $3 ton higher, Eastern Trunk Line soybean oil meal was 25¢ lower to $2.10 higher, bulk solvent cottonseed oil meal $2.75 to $3 higher, and sacked cottonseed oil meal $4 higher.

Trading volume amounted to 26,700 tons of unrestricted soybean oil meal and 2,400 tons of bulk solvent cottonseed oil meal.

Chicago Feed Club To Meet Nov. 21

CHICAGO—A famous after-dinner speaker and master of ceremonies, Bill Dornfield, will provide the feature of the next meeting of the Chicago Feed Club, scheduled for the evening of Nov. 21 at Allgauers Restaurant, 14 W. Randolph St., Chicago. The social period will begin at 5:30 p.m., with dinner at 7.

A Christmas party is scheduled for Dec. 15, at the Germania Club here and new officers elected last month will be installed at the Jan. 16 meeting.

STRAUBE

(Continued from page 1)

Mr. Straube had a genuine friendliness and a ready sense of humor.

Mr. Straube started in the feed business as a retail dealer at England, Ark., in 1918. He moved to Kansas City in 1923 and became associated with the Miller McConnell Grain Co., then a small firm just branching out into the livestock feed business. It later became Nutrena Mills, Inc. Nutrena prospered and expanded its business, adding plants in other cities. Mr. Straube became president of the Nutrena firm in 1930 and continued in that capacity until 1945.

Mr. Straube then founded his own firm, purchasing the assets and trademarks of the May Way Feed Mills, Kansas City, and changing the name to the present Pay Way Feed Mills.

Besides his activities with the American Feed Manufacturers Assn., which extended over many years,

Oscar Straube

Mr. Straube also participated in the work of the Midwest Feed Manufacturers Assn., and in 1953 served as chairman of the committee in charge of the feed production school. He also headed a Kansas City feed group which on several occasions presented feed industry programs before members of the Kansas City Chamber of Commerce.

A champion of feed research and of education, Mr. Straube worked actively in the campaign to raise funds for the feed technology courses and model mill at Kansas State College.

In addition to his many business activities, Mr. Straube engaged in much charitable and civic work in Kansas City. He was a trustee of the Kansas City Conservatory of Music and a director of the Kansas City Philharmonic Assn. He was a member and past president of the River Club and the Kansas City Club, a member of the Saddle and Sirloin Club, the Kansas City Country Club, Mercury Club, Wine and Food Society and Friends of Art.

For many years he was a member of the board of the Union National Bank of Kansas City and of Edward Keith, Inc., furniture firm.

Mr. Straube was born in Little Rock, Ark., where his father was in the milling business.

He leaves his widow, Mrs. Rosemond Straube; a daughter, Jo Ann Straube; a son, Oscar Max Straube III, and four sisters, Mrs. Annie Fields, Mrs. Leslie Jackson, and Mrs William Clark, all of Little Rock, and Mrs. Herbert Bryan, Memphis.

Funeral services were held in Kansas City Nov. 15.

Memorial Fund

In recognition of his deep interest in education and youth, friends of Oscar Straube are establishing a memorial fund for educational purposes at Kansas State College. Mr. Straube took an active interest in forming the feed technology school at Kansas State and had established a scholarship there.

Mr. Straube's family has requested of friends that no flowers be sent and that those who wish to do so make charitable gifts of their own choosing.

Three men have been asked to serve as trustees of the fund to determine the most effective use of the fund in furthering feed education at the college. They are Edward Glennon, president of the AFMA, Chicago; Ray Ammon, president of the Midwest Feed Manufacturers Assn., St. Joseph, Mo., and Maurice Johnson, Staley Milling Co., Kansas City, who is a member of the dean's advisory committee on feed technology at Kansas State College.

Contributions to the fund may be sent to the college at Manhattan, Kansas, in the name of the Oscar Straube-Kansas State Fund, to either feed association or to the office of Feedstuffs, 612 Board of Trade Bldg., Kansas City, to be transmitted to the trustee committee.

AT NEBRASKA CONFERENCE—A highlight of the annual Nebraska Feed & Nutrition Conference held recently at the University of Nebraska was a panel discussion on livestock and poultry industry integration. Members of the panel are shown in the first picture. Left to right are: Dr. Loyd Fischer, moderator, agricultural economics department, University of Nebraska; Everett Spangler, vice president, Federal Intermediate Credit Bank, Omaha; J. J. O'Connor, executive vice president, Walnut Grove Products Co., Inc., Atlantic, Iowa, and J. K. Lepley, director of sales, Foxbilt, Inc., Des Moines. Engaged in informal discussions are the men pictured in the other three photos. They are (left to right) as follows: Second picture—M. G. McCeight, University of Nebraska, and Elvin Schultz and John H. Scofield, Crete (Neb.) Mills. Third picture—Duane Johnson, Johnson Feed Mill, Schickley, Neb.; Melvin Spahn, Sutton (Neb.) Cooperative Grain Co., and Larry Weeke, Farmers Union Cooperative Mill, Superior, Neb. Fourth picture—Vern Moore and Ken Lepley, Farmers Elevator Service Co., Ft. Dodge, Iowa, and Dr. Ernest R. Peo, animal husbandry department, University of Nebraska.

Nutrition Research Highlights Washington Meeting Program

LONGVIEW, WASH. — The program of the 11th annual Washington Animal Industry Conference at Longview Nov. 7 included talks on controlled feeding and research in poultry nutrition and management, a new look at swine feeding, new information on enzymes for chickens and turkeys and protein energy levels for growing pullets.

The meeting was held at the Lower Columbia Junior College. Over 100 people attended, including large numbers from Oregon and British Columbia.

A talk on bloat and a "rapid-fire" series of research briefs rounded out the program.

In discussing controlled feeding and current poultry research at the University of Connecticut, **Dr. E. P.** Singsen said tests at the university during the past year have demonstrated the usefulness of controlled feeding of heavy meat-type breeder hens when fed a high energy ration. He defined "controlled feeding" as a method which gives birds all the nutrients required for optimum performance, but controlling excessive feed intake so that they do not have the opportunity to become extremely fat. The term "restricted feeding" means an actual restriction of nutrient intake below the minimum requirement of the birds so that sexual maturity is delayed and body weight is reduced.

Controlled Feeding Results

Controlled feeding of a high energy diet, calculated to contain 1,014 calories of productive energy per pound, reduced body weight gain, markedly reduced mortality, and greatly improved feed efficiency, while egg production was unchanged as compared to the same ration fed ad libitum. Body weight gain was also retarded and mortality was held to a low level by the uncontrolled feeding of a low energy ration (857 calories). However, birds fed the low energy ration required approximately 25% more feed per dozen eggs than those fed the high energy ration.

"Based on feed prices current at the time the experiments were conducted," Dr. Singsen said, "the saving in feed cost was approximately $1 per bird during the 40-week experiment period in favor of the birds fed the controlled high energy ration."

Dr. Singsen emphasized that good judgment and careful observation of the birds are absolutely essential in order to apply the controlled feeding system. The key factor to watch closely is average body weight, which should remain steady or increase very slowly throughout the year, he said. Use of a controlled feeding system will increase the amount of labor required in feeding, but the results obtained appear to justify the extra labor cost, Dr. Singsen said.

Swine Nutrition

Dr. J. E. Oldfield, Oregon State College, emphasized some of the ways in which good nutrition and economy can be wedded in selection of ingredients for swine rations. "Swine have periods of maximum growth of their different body tissues (fat, muscle and bone)," Dr. Oldfield said, "and adjustment of the ration within these particular periods can markedly influence the extent to which the particular tissue is developed."

Demands for a meat-type carcass can best be met by a high plane of nutrition during the early growth stages, followed by a certain amount of dietary restriction in the finishing stage, Dr. Oldfield said. Such limitation during the finishing period can be made by a simple restriction of the amount of feed given, or by the inclusion of some fibrous material such as ground alfalfa hay or dried beet pulp in the finishing ration.

One of the first experiments conducted in an attempt to improve the utilization of barley by enzyme supplementation in swine rations was reported by Dr. Oldfield. Some improvement in the daily rate of gain was effected by addition of the amylolytic enzyme preparation in the case of light pigs, but no improvement was obtained with heavy pigs. Further work on this problem is continuing at the Oregon station.

The use of fat as an energy source in swine rations was also discussed. Addition of animal fat to swine rations did not interfere with rate of gain, but feed conversion efficiency was not improved. Experiments at the Oregon station attempting use of fish oils as an energy source in swine rations showed that good growth was obtained, but that carcass quality was greatly impaired. Dr. Oldfield also discussed the choosing of protein supplements for swine rations.

Poultry Research

Following the evening banquet, Dr. Singsen was again on the program to discuss current research in poultry nutrition and management at the Storrs (Conn.) experiment station. He discussed work on the role of light for growing chicks and growing birds, new findings and new thinking on use of antibiotics, and numerous studies on energy evaluation and utilization.

Recommendations for lighting baby chicks, replacement pullets and laying hens were given. An experiment comparing the use of all-night lights versus 14-hour lights at the Storrs egg laying test showed that an improvement in egg production of 1.78% was obtained by the use of all-night lighting. Improvement was greatest during the first 12 weeks of the test, at which time egg prices were highest, Dr. Singsen said.

A significant chick growth response in the Connecticut laboratory to penicillin and zinc bacitracin was obtained, but the total response was smaller than that obtained in a similar experiment conducted seven years ago in the same laboratory.

Antibiotic Tests

During 1956-57, at the Storrs egg laying test, a significant increase in egg production was obtained by adding 100 gm. of Aureomycin per ton of feed. The following year, however, addition of 50 gm. of an antibiotic mixture failed to improve egg production. A more thorough analysis of the data showed, however, that birds housed in previously unmedicated buildings responded favorably to antibiotics, whereas those housed in buildings in which antibiotics had been used continuously for the previous two years failed completely to respond, Dr. Singsen said.

Work at Connecticut showing that metabolizable energy is a much more precise measure of metabolic useful energy of rations for growth than the productive energy values confirms the work previously reported by Cornell University. Maintenance requirement of chicks, a key factor in estimating the productive energy value, was significantly different among chicks fed the three different basal rations, thus questioning the validity of determined productive energy measurements.

Enzymes for Poultry

Enzymes for chickens and turkeys came in for their share of attention as both Dr. L. S. Jensen, Washington State College, and Dr. L. R. Berg, Western Washington experiment station, discussed recent experimental work in this field.

Dr. Jensen said that one of the more interesting questions still remaining to be answered is the iden-

(Turn to WASHINGTON, page 109)

MILLFEED • FEED GRAIN
FEED INGREDIENTS
What Do You Need?
—Jerry Parks
611 Board of Trade
KANSAS CITY, MISSOURI

FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S

For Money-Saving Dairy Feeds
You Need
MIXERS' COARSE GROUND
WHITE OATS

MIXERS' COARSE GROUND WHITE OATS . . . now truly "coarse ground" for best results in dairy feeds. Its uniform quality and unquestioned nutritional value give the dairyman the real feeding results he needs for sustained production at a price he can afford to pay. And, in order to thrive, the dairy cow's complicated digestive system needs the feeding values found only in a product like MIXERS' COARSE GROUND WHITE OATS.

Ask for samples and delivered prices.
Mixed cars shipped at straight car prices
Our Teletype Number is MP 477

TOWER BRAND ROLLED OATS (Steam processed)
ACE BRAND ROLLED OATS (Steam processed)
KING BRAND ROLLED OATS (Steam processed)
WHOLE OAT GROATS
STEEL CUT OAT GROATS
BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steam processed)
GLENWOOD PEARLED BARLEY
STAR CRACKED PEARLED BARLEY
STEEL CUT WHEAT
ACME GROUND DOMESTIC FLAX SCREENINGS

Millers TO THE FEED TRADE

FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA

FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S

Farmers Indicate "Intense" Interest In Field Pelleters

ST. LOUIS, MO.—U.S. farmers are "intensely interested in still-unperfected field hay pelleting machines" according to a survey by Doane Agricultural Service, Inc., St. Louis. The survey indicated that a potential market for 175,000 of these machines exists over the next five years, says Fimer C. Denis, manager of Doane's research division.

The survey conclusions are based on the response of members of the Doane "Countrywide Farm Panel" comprised of 1,900 farm families selected statistically to represent the approximately two million commercial farmers having gross annual farm incomes of $2,500 or more. This segment of farmers represents about 90% of the farm purchasing power.

The panel members were asked if they would buy a field pelleting machine during the coming five years, assuming the machine (1) was capable of pelleting hay from the windrow, (2) had a capacity of about 5-10 tons of pellets an hour, (3) turned out a pelleted form of roughage enabling 100% mechanical handling of the roughage, and (4) sold for about $10,000.

Mr. Denis said 8.8% of the panel members answered the question affirmatively. Slightly over one half of the respondents indicated they would not be in the market for this "hypothetical" pelleting machine, and almost one third were undecided whether or not they would buy one.

Interest By Regions

Farmers in the western, north Atlantic and east north central regions showed the highest interest in purchasing field pelleting machines. Other regions in order of response were west north central, south central and south Atlantic.

While the question asked was hypothetical, Doane survey experts say they feel that enough publicity and information have been available for farmers to have developed a generalized idea of what a pelleting or wafering machine looks like, as well as its functions.

Although pelleting forage for livestock is quite new, Forest L. Goetsch, editor of the Doane Agricultural Digest, Doane's price outlook and management advisory service for farmers, points out it is one of the "hottest" and fastest growing developments in agriculture.

Actually, Mr. Goetsch points out, two different developments are involved; the first is the pelleting of high-roughage, complete rations with conventional, stationary equipment. The other is a newer development in which hay is pelleted or "wafered" with portable equipment from windrows right in the field.

Livestock gains on the complete-ration pellets have been unusually good, and the practice is already well established in parts of the western and central U.S.

(Turn to PELLETING, page 109)

SHOT WITH DEER PELLETS (MAYBE)

CHASKA, MINN.—Wally Richards, Teske Coal & Feed, Chaska, didn't join the army of hunters who annually trek 300-400 miles into Minnesota's north woods for their deer when the season opened Nov. 8. He began his hunt three miles north of Chaska, which is almost within shouting distance of metropolitan Minneapolis, and was home with his deer by 8:15 a.m. There are "reports" being circulated among envious Chaska hunters who returned empty-handed from the north woods that the feed man had been priming the deer all summer with Teske's Delight feeds.

Clyde Meinhoefer Named ADM Feed Division Manager

MINNEAPOLIS — New managers of the feed and alfalfa divisions of Archer-Daniels-Midland Co., Minneapolis, were announced recently by John H. Daniels, ADM president.

Clyde C. Meinhoefer, Minneapolis, assistant vice president and formerly assistant to the president, was named manager of the feed division. He succeeds Mr. Daniels who was elected president of ADM on Nov. 6.

Robert C. Fulton, Kansas City, was appointed manager of the alfalfa division, succeeding Richard G. Brierley, newly-elected executive vice president of the company.

Mr. Meinhoefer, assistant to the president since last January, formerly was president of Archer-Daniels-Midland Co. (Canada), Ltd. He joined the company in 1932 as a chemist at Wyandotte, Mich., and later served as plant manager and general manager for ADM at Toronto. In 1943 he was elected executive vice president of the Canadian subsidiary and president in 1956. Mr. Meinhoefer attended the Advanced Management Program at Harvard University in 1957. He holds a bachelor of science degree in chemistry from Detroit Institute of Technology.

Mr. Fulton, production manager of the alfalfa division the past year, joined ADM in 1953 as a purchasing agent for the division. Later he became fleet manager for the alfalfa division and in 1955 assistant production manager. His headquarters will remain in Kansas City. Mr. Fulton attended Westminster College and the University of Missouri.

ADM's feed division manufactures Archer Booster Feeds for livestock and poultry. The division operates seven feed plants in Minnesota, Missouri, Kansas, and Illinois, and has retail dealers in 12 midwestern and southern states.

The alfalfa division is a processor of dehydrated alfalfa, with 30 plants in Kansas, Nebraska, Missouri, Colorado and Arizona.

QUARTERLY DIVIDEND

MIDLAND, MICH.—The board of directors of the Dow Chemical Co. has declared a dividend of 30¢ per share on its common stock payable Jan. 15, 1959, to stockholders of record at the close of business on Dec. 15, 1958.

SWINE CONFERENCE

(Continued from page 1)

length, 60% heritable; backfat thickness, 50% heritable, and loin area, or yield of lean cuts, 30% heritable.

He further stated that many breeders today are producing meat-type hogs which have a 29-in. carcass, less than 1.65 in. of backfat, more than 3.75 sq. in. of loin eye and carcasses that yield 35% of their liveweight in lean cuts.

Dr. Hillier expressed the opinion that swine breeders, through a unified and concerted effort, can meet the stiff challenge from the consuming public, namely, pork with more lean and less fat.

Nutrition

Dr. Damon Catron, Iowa State College swine nutritionist, stated that advancements in swine nutrition in the future will probably be more difficult to make than they have been in the past. He suggested cooperative research between various scientific groups—bacteriologists, biochemists, endocrinologists, physiologists and veterinarians—as one means of making greater progress.

A few of the many things discussed by Dr. Catron were nutritional requirements as affected by disease and stress, new things for feed from industry, formulation of feed for a specific purpose, life-cycle feeding and production, and the possibility of controlled fermentation of feedstuffs.

Of special interest to the feed industry was "A Futuramic Report From the Experts on Swine Nutrition" as prepared by a workship committee composed of Dr. Warren A. McMillen (chairman), A. E. Staley Manufacturing Co.; Dr. W. M. Beeson, Purdue University; Charles Bell, U.S. Department of Agriculture; Hayes Bulfer, Minnesota swine producer; Dr. Catron, and Dr. S. W. Terrill, University of Illinois. The committee agreed that under average farm conditions, rate of gain on pigs from 40 lb. to market weight has increased from an estimated .65 lb. in 1910 to 1.0 lb. in 1930 to approximately 1.5 lb. today. During the same period, feed required per pound of gain has decreased from 7.5 lb. in 1910 and 5 lb. in 1930 to 3.5 lb. today.

It is expected that within the next 10-20 years average rate of gain will be increased to 2 lb. per day, and 3 lb. or less of feed will be required per pound of gain. In the event weights of hogs marketed should fall below 200 lb., feed efficiency as low as 2.5 lb. per pound of gain is visualized. Rations will be largely framed around a corn-soybean meal diet with the substitution of small grains such as milo and barley in those areas where prevalent.

Further committee views on the future of swine production are as follows:

1. Protein Levels — Protein levels have been reduced about two percentage units for various stages of growth and finishing in the past decade. New sources of nutrients which were formerly supplied by crude protein supplements have made this possible. It is expected that protein levels will be further reduced as the quality of protein is improved through addition of synthetic amino acids.

2. Fats—Animal and vegetable fats have proved to be of little value in fortifying swine rations except for improvement in feed efficiency. Extensive use of fats as a source of energy is unlikely in view of their price relationship with grain.

3. Vitamins—Confinement of hogs on concrete will increase the need for vitamin fortification in swine rations. Synthetic vitamins, such as riboflavin, pantothenic acid, niacin and vitamin B_{12}, will be widely used to meet the daily requirements of swine in various stages of growth and reproduction. When new vitamins are discovered and the need is established, they will be added to swine rations in relatively pure form.

4. Minerals — Daily mineral requirements will be increased as the rate of gain is stepped up. More attention will be given to balance and interrelationships of minerals, including trace elements. The anemia problem will increase as we move from pasture to concrete. Treatment of suckling pigs with iron injections or some other method of control will become routine.

5. Unidentified growth factors — These will become more critical as swine production moves to concrete. Hogs will be subjected to increased nutritional stress. They will not have access to the natural sources of nutrients formerly available on pasture and soil. Silages, green cut forages and dehydrated forages will play a more important role in feeding breeding stock on concrete.

6. Antibiotics — There will be a continued need for antibiotics, arsenicals and other bactericidal agents to suppress disease levels. The search for feed additives must continue in order to meet the challenge of new resistant strains of disease organisms. In addition, more permanent methods of disease protection must be found. Recent experimental research with enzymes and hormones indicates their potentialities as factors in swine nutrition for the future.

7. Free Choice versus Complete Feeds—There is general agreement that pigs will be fed complete rations at least up to 50-75 lb. in drylot feeding. A majority of the experiments have shown that there is no significant difference in gain or feed efficiency between hogs fed free choice and complete mixed rations in drylot. In spite of this, there is a general feeling that the trend is toward complete mixed rations in the larger operations. This trend is influenced by increasing automation, more uniform mixing of micro-nutrients and drugs with other ingredients in a balanced ration.

Dr. Albert C. Groschke

JOINS EASTERN STATES—Dr. Albert C. Groschke has joined Eastern States Farmers Exchange to work in poultry nutrition research with Dr. Francis H. Bird at Ellington, Conn. Dr. Groschke was formerly technical director of the feed supplements department of the Borden Co. While there he was on the nutrition council of the American Feed Manufacturers Assn. and served as chairman of the research committee.

8. Pelleting — Use of pellets for creep feeding baby pigs and pig starters will continue. Complete pellets for hogs of all ages may be more generally accepted if cost of pelleting can be substantially reduced.

9. Grain versus Pasture—Market hog production is rapidly shifting to intensified systems of management on concrete. The trend towards confinement of breeding stock is expected to take place more slowly. Increased fortification of brood sow diets may be necessary when sows are kept in confinement generation after generation.

10. Weaning—We now have the nutritional know-how to wean pigs at 5-6 weeks of age under farm conditions. Some specialized producers are weaning successfully at 3-4 weeks on fortified starters that are now available. Looking to the future, the practical minimum early weaning age appears to be about three weeks.

The committee members concluded their report by saying that, up to now, swine nutrition has been based largely on pasture philosophy. With the change to concrete feeding and accelerated performance, the allowances and requirements for many of the nutrients and additives will have to be re-evaluated. The most pressing immediate need is for study and re-evaluation of requirements for brood sows fed in confinement. Increased automation will have an impact on feeding. This could change formulation, form of supplements and even the feeding program.

Diseases, Management

Dr. S. H. McNutt, University of Wisconsin veterinarian, told his audience the eradication of hog cholera would return $40 million a year to the industry, and that the eradication of swine brucellosis would return an additional $10 million.

Prof. H. G. Russell, University of

(Turn to SWINE CONFERENCE, page 114)

TURKEY FEED MANUFACTURERS

For top feed efficiency be sure your formulations contain sufficient Hydan trademark

STARTER RATION

Corn	45.0%	
Soybean oil meal	45.0%	
Fish meal	5.0%	
Misc.	5.0%	
	0.59%	required methionine*
	0.49%	actual methionine
	0.10%	methionine deficiency

Starter rations need sufficient added Methionine for top feed efficiency

Starter diets containing 30% protein are capable of supporting at least 900 calories of productive energy/lb. However, the combination shown at the left contains only 0.49% methionine, whereas the requirement is 0.59%. The deficiency of 0.10% can be economically corrected by the addition of "Hydan" at the rate of 2 lbs. per ton. Rapid early growth during this critical period requires a completely balanced protein.

GROWER RATION

Corn	61.5%	
Soybean oil meal	29.7%	
Fish meal	3.8%	
Misc.	5.0%	
	0.45%	required methionine*
	0.40%	actual methionine
	0.05%	methionine deficiency

Grower rations need sufficient added Methionine for top feed efficiency

Grower diets of approximately 23% protein will properly balance with energy content in the range of 920 to 1000 cal./lb. depending on stage of growth. The ingredient combination at the left is deficient in methionine by 0.05%—1 lb./ton. The use of "Hydan" to supplement feeds in this important growing period assures maximum rate of growth with high-efficiency diets.

FINISHER RATION

Corn	78.0%	
Soybean oil meal	14.5%	
Fish meal	2.5%	
Misc.	5.0%	
	0.31%	required methionine*
	0.285%	actual methionine
	0.025%	methionine deficiency

Finisher rations need sufficient added Methionine for top feed efficiency

Finisher diets containing a well-balanced protein can be formulated to a calorie/protein ratio of as high as 65/1. The 16% protein mixture shown at the left is only slightly deficient in methionine. For improved utilization of energy content during this period of heavy feed consumption, such mixtures should be supplemented with "Hydan" at the rate of ½ lb./ton.

*Based on a requirement of approximately 2% of protein.

FOR YOUR FORMULATION

Use Du Pont HYDAN . . . the new, lower-cost source of Methionine

"Hydan," the latest achievement of Du Pont research, which pioneered the methionine-energy concept, is a new source of methionine that contains 90% active ingredient and costs substantially less than methionine products previously available. Now the best way to obtain an effective protein in today's turkey rations—at the best possible cost—is to use new "Hydan" as your source of supplemental methionine activity.

"Hydan" is the latest result of Du Pont's continuing research in feedstuffs to help all turkey raisers to boost efficiency, cut costs, and thereby increase profits. Be sure that your feeds contain sufficient methionine. You can get lower-cost "Hydan" by contacting the Grasselli District Office nearest you.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Hydan trademark
feed supplement

DISTRICT OFFICES: ATLANTA 8, GA., 739 W. Peachtree St. • CLEVELAND 14, OHIO, 1321 National City Bank Building
HOUSTON 25, TEXAS, 1100 E. Holcombe Boulevard • MINNEAPOLIS 2, MINN., 1207 Foshay Tower • PALO ALTO, CALIF., 701 Welch Road
WYNNEWOOD (PHILA.), PA., 308 E. Lancaster Ave. • IN CANADA: Du Pont Company of Canada (1956) Limited, P. O. Box 660, Montreal, Quebec

Cornell Conference Delegates Hear New Findings on Amino Acids, Fats in Poultry Feeding

By GEORGE L. GATES
Editor of Feedstuffs

BUFFALO—The current interest in protein and energy nutrition of poultry was reflected in a number of the papers presented this week at the Cornell Nutrition Conference in Buffalo.

Two of the papers in the poultry nutrition field dealt with new findings on amino acid requirements of chickens. Others covered such things as metabolizable energy values of fats for chickens and special nutritive properties of fats in poultry rations. Further information was presented, too, on zinc, potassium and vitamin K requirements.

Speakers at the conference included Cornell University staff members and several researchers from other colleges.

Summaries of some of the poultry nutrition talks follow:

OBSERVATIONS ON THE AMINO ACID REQUIREMENTS OF CHICKS FED CRYSTALLINE AMINO ACIDS—H. M. Scott, University of Illinois: Experiments were initiated to develop a free amino acid diet which, when fed on an ad libitum basis, would be consumed in sufficient amounts to support satisfactory growth during the second week of the chick's life. Some degree of success has been obtained since chicks grow at the rate of 9-11 gm. per day on the diet used in the current series of tests. It has been used to reexamine, in the absence of intact protein, the chick's requirement for the essential amino acids, including glutamic acid.

The first amino acid mixture to show promise was one formulated to simulate the proportion of essential amino acids present in the fat-free chicken carcass. Starting with the original mixture, chicks were fed graded levels of each amino acid to determine their optimum levels using weight gain and feed-to-gain ratio as criteria. Except for methionine, only the L-forms were used for determining the optimum concentration for each of the amino acids. The concentration of glutamic acid, the only source of non-specific nitrogen, was varied to maintain the total amino acids at a constant level (30%) in the diet. To provide a standard, one lot of chicks in each assay was fed the same basal diet with isolated soybean protein, supplemented with glycine and methionine, substituted for the amino acid mixture and part of the starch to provide 30% protein. All assays were initiated with chicks seven days of age. In most instances the assays were of seven days duration.

Level of Amino Acids (Free Base) Resulting in Maximum Response

		Per cent of diet
1.	Glycine	0.50
2.	L-Lysine	1.23
3.	L-Tryptophan	0.175
4.	L-Threonine	0.58
5.	L-Leucine	1.66
6.	L-Histidine	0.41
7.	DL-Methionine	0.60*
8.	DL-Methionine	0.20†
9.	L-Phenylalanine	0.59‡
10.	L-Tyrosine	0.80¶
11.	L-Isoleucine	0.84
12.	L-Valine	0.96
13.	L-Arginine	1.16
14.	L-Glutamic acid	15.00

*In the absence of cystine.
†In the presence of .04% cystine.
‡In the presence of 0.70% tyrosine.
¶In the presence of 0.44% phenylalanine.

The accompanying table summarizes the results obtained from all 14 assays and the order in which assays were conducted. The values represent the amino acid (free base) concentration (% of diet) resulting in maximum response. For the most part the values obtained with the amino acid diet are in close agreement with the recommendations of the National Research Council. The requirements for glycine, methionine and phenylalanine are substantially less than NRC, while histidine and possibly lysine also are somewhat greater. The phenylalanine data confirm the results recently reported by Fisher.

THE AMINO ACID REQUIREMENT OF THE LAYING HEN—Hans Fisher, Rutgers University, New Brunswick, N.J.: With the realization that considerably more dietary energy is required by hens on a free amino acid vs. a protein-containing diet, a major breakthrough in evaluation of requirements became possible. By systematically eliminating one amino acid at a time, the following were found to be essential for the laying hen: Arginine, glutamic acid, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine.

The next step was to determine minimal levels of all amino acids. By trial and error and through use of the egg protein "ratio" technique, the objectives were realized. The "ratio" technique is based on the assumption that the amino acids required for egg production must be present in the diet in a pattern similar to that found in the proteins of whole eggs. By accurately determining the requirement of one essential amino acid, one can then calculate estimates of the requirement for the remaining amino acids.

In the accompanying table are listed the minimal requirements for the hen together with a compilation of the same values increased by 10%. Both of these amino acid mixtures were fed to hens for three week periods. Considering that one group received strictly minimal levels, the birds performed surprisingly well. On the other hand, the 10% increase in all amino acids improved egg production considerably, confirming the minimal status of the amino acids originally estimated.

In order to critically test the amino acid levels determined on the free amino acid diet, practical rations were formulated so that the protein of the ration would come as close as possible in matching the estimated requirements. It was noted that with proper choice of cereals, nearly all amino acids can be supplied without using high levels of protein concentrates. Results indicated that with practical ingredients under floor management conditions,

(Turn to POULTRY, page 15)

Minimal Requirement of Amino Acids for Egg Production

Amino acid	Minimal requirement*	Minimal requirement increased by 10%
Histidine	.18	.20
Isoleucine	.50	.55
Leucine	.68	.75
Lysine	.50	.55
Methionine	.24	.26
Cystine	.16	.18
Phenylalanine	.42	.46
Tyrosine	.30	.33
Threonine	.36	.40
Tryptophan	.12	.13
Valine	.54	.59

*From Johnson and Fisher; British Journal of Nutrition, Vol. 12, page 276, 1958.

CORNELL REPORTS

The stories on this page contain summaries of the more than 20 research papers, dealing with various aspects of animal and poultry nutrition, which were presented this week at the Cornell Nutrition Conference in Buffalo. The event was held Nov. 13-14 at the Hotel Statler under the sponsorship of Cornell University, Ithaca, N.Y., and the American Feed Manufacturers Assn. Another story on the conference will be found on page 1.

Research on Enzymes and Selenium Outlined

BUFFALO—Two recent research developments which have been the object of a good deal of attention have been: (1) Improvement of barley rations for poultry through enzyme supplementation, and (2) the role of selenium as a required trace mineral in animal nutrition. Work on both of these developments was described in talks at the Cornell Nutrition Conference this week in Buffalo.

Summaries of the papers follow:

DIETARY ENZYMES IN THE NUTRITION OF ANIMALS—Leo S. Jensen, State College of Washington: Since barley is the chief economically available grain produced in the Pacific Northwest, studies were undertaken at our station in attempts to improve its value for poultry. It was discovered that a simple water treatment of barley markedly improved its utilization by chicks and also that addition of a fungal enzyme preparation brought about a similar improvement. A somewhat greater response is usually obtained by water treatment. In addition to the effect on growth and feed efficiency by these treatments, a change in condition of feces is obtained. The mechanism of action appears to be the same in both water treatment and enzyme supplementation.

Both oats and barley were improved by enzyme supplementation. Wheat mixed feed and rye also were improved. Some workers, in some cases, have obtained responses with corn. We obtained a small consistent improvement by water treating corn

(Turn to ENZYMES, page 16)

Feed Pelleting Experiments Reviewed

BUFFALO—The effects of pelleting on feed values were reviewed by two scientists at the Cornell Nutrition Conference.

Feeding trial data involving work with sheep, beef cattle and swine was the subject of one review, and an examination of the possible metabolic effects of pelleting was presented in the second discussion. Here are summaries of these presentations:

PELLETED RATIONS (FEEDING TRIAL DATA)—D. E. Hogue, Cornell University: In recent years interest in pelleted feeds and especially pelleted roughages apparently has been increasing rapidly. With modern mechanization and newer feeding methods, the possibility of using pelleted feed ingredients or a completely pelleted ration has become apparent. Some observations that may be made upon study of reported experimental results with beef cattle, sheep and swine are:

Sheep—Response to pelleted feeds has been generally favorable as to both increases in weight gain and feed consumption. However, in some instances there has not been such a favorable increase. Data are not complete enough to ascribe differences in response to any specific ration type or form. Many factors such as roughage species or quality, as well as the concentrate fed and roughage to concentrate ratio may be of importance. In tests in which the hay to concentrate ration was varied, increasing

(Turn to PELLETING, page 102)

• • •

Management, Feed Needs of Ruminants, Swine Covered

BUFFALO—The close relationship of effective management programs and feeding programs was emphasized in discussions of swine and ruminant nutrition presented at the Cornell Nutrition Conference.

Studies aimed at developing improved feeding programs for young dairy calves also were reviewed, along with research on nutritional requirements of mature dairy animals on pasture and in barns.

The role of ethanol in ruminant nutrition, amino acid adequacy of milo and development of a new technique for rumen studies were other topics in this portion of the program. Summaries of the discussions follow:

BROOD SOW FEEDING AND MANAGEMENT—L. E. Hanson, University of Minnesota: The practice of self-feeding pregnant females has been adopted by some, but many still prefer to hand feed these animals. The largest single requirement in any ration is energy. There seems to be general agreement today that many gestating sows and gilts are fed more energy than they need.

Since 1950 the Minnesota station has conducted a series of experiments to study the effects of restricted feeding of gilts on growth and reproduction. The Illinois station has compared various levels of feeding by hand feeding, and Purdue and Iowa have reported studies on the use of silage for sows. Tests at Minnesota have included use of the following ingredients to restrict energy intake: Ground corn cobs, alfalfa, salt, and steamed bone meal.

Results of these experiments may be summarized as follows: Pregnant sows and gilts will over-eat if given as much concentrated feed as they want. If gilts are placed on restricted ration at a weight of 125-130 lb., 20 to 30% ground corn cobs in a mixed ration containing 15% alfalfa meal will control weight gains satisfactorily until after breeding, even though they are self-fed.

Weight gains of gilts that weigh 275 lb. or more at breeding can be controlled by hand-feeding 4.5@5 lb. of a complete ration daily or self-feeding a mixture which contains 45% or more ground alfalfa hay. For these larger gilts, 30% ground corn cobs and 15% dehydrated alfalfa meal in a mixed ration does not control weight gains satisfactorily. A salt level of 5 or 10% or 10% bone meal does not control feed intake of self-fed gilts satisfactorily.

Corn silage, properly supplemented (and supplement hand-fed) will control weight gains and produce excellent litters. Silages not properly supplemented produce poor results.

The most efficient and economical method of feeding bred sows and gilts will vary from farm to farm. Protein levels of self-fed gestation rations did not affect average litter size or birth weight of pigs in Minnesota studies. However, they did appear to affect the susceptibility of the pigs to illness and the ability to survive the disease.

AMINO ACID ADEQUACY OF MILO (GRAIN SORGHUM) FOR THE GROWTH OF SWINE AND RATS—W. G. Pond, Cornell University: Milo presently constitutes a significant proportion of the grains grown for use in livestock feeding in the U.S. The continued use of this grain as an important livestock feed depends on its ability to compete with corn on both an economic and nutritive basis.

The composition of the many varieties grown at present is quite constant in fiber, fat, ash and moisture, but quite variable in protein. The average crude protein content of milo

is 11.3%, compared with 8.6% for corn. Smaller amounts of supplemental protein are usually required to formulate a ration containing a given percentage of protein with milo than would be needed with corn, but the quality (essential amino acid content) of this protein must be good because milo, like other cereal grains, is a poor source of some of these amino acids.

A review of work involving growth studies with rats, designed to test the amino acid deficiencies of milo, and practical feeding trials with swine concerning the use of protein and amino acid supplementation to milo rations, may be summarized as follows:

Rat Studies—Weanling male rats were used to study the effects of supplementing milo with amino acids. The basal diet used in all experiments was composed of Kafir 44-14, 93.85%; mineral mixture 4%; vitamin mixture, 2.15%. The Kafir contained 9.13% crude protein.

The addition of .5% L-lysine and .2% DL-threonine to the basal ration produced growth approximately equal to that obtained with a purified diet containing 11% casein. The addition of .2 or .3% DL-isoleucine, .05 or .1% DL-methionine, .1% DL-tryptophan or .2% DL-valine had no effect on growth rate in any of the combinations used. Based on these results it is indicated that lysine and threonine are the most limiting amino acids in milo for growth. The importance of the level of the second limiting amino acid (threonine) in influencing the response to added increments of the first limiting amino acid (lysine) was demonstrated.

Swine Studies—Feeding trials with swine have verified that lysine is the first limiting amino acid in milo. Milo-soybean meal type rations repeatedly produced growth rate and feed efficiency equal to that obtained with similar rations in which animal and milk-protein supplements replaced part of the soybean meal. This indicates that the protein contained in a combination of milo and soybean meal provides a satisfactory balance of essential amino acids.

A 16% protein milo-soybean meal ration tended consistently to produce faster growth and higher efficiency than a similar ration containing 14% protein. In formulating a milo ration for swine the level of protein necessary to provide an adequate supply of all of the essential amino acids may be higher than that required when corn is used as the grain source.

THE UTILIZATION OF FATS BY DAIRY CALVES—D. T. Hopkins, Cornell University: During the past few years there has been an increasing use of milk replacers in lieu of whole milk in the diet of the young dairy calf. Milk replacers offer advantages of convenience of feeding and they are excellent carriers of feed additives. There is some confusion as to the basis upon which milk replacers and whole milk may be compared. They should be compared on an energy basis. On a TDN basis, 350 lb. whole milk is equal to about 60 lb. of a well-digested low-fat milk replacer, or 25 lb. milk replacer is equivalent to 147 lb. of whole milk.

Caution should be used in calculating the TDN of many milk replacers, as the digestibility of many common feed ingredients by the week-old calf is unknown. Furthermore, some vegetable feedstuffs have been found to be poorly utilized in the early days of life, the digestibility increasing with age. This may be due to a physiological enzyme insufficiency of the newborn calf.

The addition of fats to milk replacers is becoming increasingly popular, probably for two reasons: They often are cheaper per unit of energy than other common ingredients; and, the inclusion of fat raises the caloric density of the milk replacer. A high caloric intake is permitted without a corresponding high solids intake, thus eliminating some of the digestive upsets encountered by a high solids intake.

Digestion trials were conducted at Cornell with calves of two to three weeks of age. The animals received various experimental milk replacers as a sole source of nutrients. In the first study, a basal mix was supplemented with the following fats: Tallow, cocoanut fat, butter, tallow plus lecithin, cocoanut fat plus lecithin and homogenized cocoanut fat plus lecithin.

Tallow, cocoanut fat and butter were found to be rather poorly utilized. However, the inclusion of lecithin in the diet improved the utilization of cocoanut fat and tallow. In a second study, in which the digestibility of grease and grease plus lecithin was investigated under similar conditions, lecithin was again demonstrated to increase fat digestibility. While it seems probable that this phenomenon is due to an emulsifying action of lecithin in the digestive tract, it is equally possible that it may be due to some other action of a constituent of the crude lecithin. A study of other emulsifying agents for similar effect on fat digestibility would be of interest.

AN EVALUATION OF SEVERAL SYSTEMS OF FEEDING YOUNG DAIRY CALVES—R. G. Warner, H. N. Harrison and J. K. Loosli, Cornell University: Recommendations from the universities and feed companies give the dairymen a large number of different milk-feeding systems from which to choose in raising herd replacements. The best system in each case is partly determined by fixed management conditions. There are, however, in addition certain basic considerations regarding nutrition which should influence the decision of whether to adopt a certain practice or procedure.

Any satisfactory calf-rearing plan should meet the following requirements: (1) Produce "normal" growth; (2) Produce a healthy, thrifty, vigorous calf; (3) Produce a calf of "satisfactory" appearance; (4) Be economical.

If the feeder is satisfied with the performance and appearance of his calves, it may be safely assumed that cost and economy will be the additional factors determining his acceptance or rejection of a feeding system. An accurate estimate of cost must be based on the amount of nutrients available to the calf in each pound of feed used. Further, the effect that one feed has on the consumption of another must be noted if the most economical and efficient feeding scheme is to be chosen.

A number of calf starter, milk replacer, roughage and antibiotic experiments have been conducted at Cornell during the past six years involving a total of 477 calves. It is felt that the numbers are now adequate and the pattern of response consistent enough to allow some broad generalizations to be made. It is hoped that future refinements of these methods of evaluation will be possible as a contribution toward describing the fundamental "laws of nature" relating to early calf growth. A study of these experimental results has developed the following conclusions:

1. From the viewpoint of subsequent performance, appearance, economy and health, there is little reason for the average dairyman to seek a rate of gain for the first seven weeks in Holstein dairy herd replacements in excess of 1 lb. per day.

2. Reduction in the level of milk feeding will result in a reduced rate of gain because, with sporadic exceptions, calves will not increase dry feed consumption sufficiently to fully compensate for the lost nutrients. The need for high quality, palatable calf starters and roughage is increased as the milk level is reduced.

3. Under Cornell conditions the following levels of milk will result in the respective daily gains to seven weeks: 350 lb., 1.25 lb.; 250 lb., 1.1

(Turn to page 14)

Bulkanizer
Truck Body
puts you in the Bulk Feed Business for about $1500*

. . . less cost than any other similar unit

Easy one-man operation A complete, self-unloading truck body for only slightly more than a hydraulic dump box. To unload, simply swing auger into position and start. Standard length auger discharges up to 22 feet high. Raises hydraulically and swivels a full 360°. Steep V body design eliminates sweeping or scooping. All operating controls together.

Unloads up to 1,200 lbs. per min. You spend less time per delivery. Make more deliveries per day. Two models; capacities of 8,800 lb. and 11,760 lb.

Low maintenance costs No chains or sprockets to wear out or bother with. Steel-cut, case-hardened gears run in oil. The three gear box elbows are interchangeable for easy service. Automotive seals keep grease in, dust and feed out. Bulkanizer farm trailer available for feeders in 1½, 2 and 3 ton models.

*Mounted on your truck frame. Prices vary slightly according to location.

NORTH AMERICAN MFG. CO.

Quality performance and low cost make the Bulkanizer your most profitable way to get into the big bulk feed business. Mail this coupon today for more information.

NORTH AMERICAN MFG. CO. Sioux City, Iowa Dept. FS-11

Please send me further information on the Bulkanizer truck bodies. I understand there's no obligation.

NAME .....

ADDRESS .....

CITY ..... STATE .....

SUPERIOR BIOLOGICAL NOPCAY® CONFIRMED BY INDEPENDENT

YOU GET MORE FOR YOUR MONEY WITH NOPCO'S NEW MICRATIZED® VITAMIN A

From the feeder's point of view the real test of a vitamin A product is its effectiveness in the digestive tract. The most common method of demonstrating the degree of this is to feed high levels of vitamin A and measure liver storage. It has the advantage of giving conclusive evidence of such factors as digestibility, availability and utilization.

Independent research laboratories confirm the superior biological effectiveness of Nopcay Type V. Published herewith are results of studies by two such laboratories—Lime Crest Research Laboratory, Newton, N.J., and a West Coast research laboratory. Incidentally, their widely separated locations also provide data on the effect of climate and environment.

LIME CREST RESEARCH LABORATORY

Experimental Procedure

One-day-old male chicks of the Nichols strain of New Hampshires were randomly distributed into duplicate lots. Control lots were fed a basal diet which was devoid of vitamin A or its precursors. Other lots received 4800 USP units of vitamin A from Nopcay Type V, dry product "X", fish liver oil, and alfalfa meal.

RESULTS: Liver Storage of Vitamin A (5-week-old chicks)

PRODUCT	VitaminA Added (USP units/ lb. of diet)	Vitamin A Ingested at End of 5 Weeks (USP units)	Liver Storage –Vitamin A Activity– (USP units)	Vitamin A Stored Compared to Amount Ingested (%)
Nopcay Type V	4800	12,653	4613	36.5
Dry product "X"	4800	12,648	3193	25.2
Fish liver oil	4800	12,350	3444	27.9
Alfalfa meal	4800	12,504	1176	9.4

The differences in liver storage between chicks fed Nopcay Type V and the other vitamin A sources are highly significant. Since all chicks ingested approximately the same amounts of vitamin A, the improved utilization of Nopcay Type V is attributable to improved biological effectiveness.

If we compare the amount of vitamin A stored in the liver of chicks fed Nopcay Type V with the amount stored by those fed the other products, we find that the Type V birds stored 30.8% more than dry product "X"; 25.3% more than fish liver oil; and 74.5% more than alfalfa meal.

Basic producers of Micratized® Vitamins A and D, niacin,

EFFECTIVENESS OF TYPE V RESEARCH LABORATORIES

A WEST COAST RESEARCH LABORATORY*

Experimental Procedure

One-day-old White Rock male chicks were used in this experiment. Apart from this difference, the test procedure was the same as that of Lime Crest. Alfalfa meal was not used as a source of vitamin A in this study.

RESULTS: Liver Storage of Vitamin A (5-week-old chicks)

PRODUCT	VitaminA Added (USP units/ lb. of diet)	Vitamin A Ingested at End of 5 Weeks (USP units)	Liver Storage –Vitamin A Activity†– (USP units)	Vitamin A Stored Compared to Amount Ingested (%)
Nopcay Type V	4800	12,718	3057	24.0
Dry product "X"	4800	12,868	1050	8.2
Fish liver oil	4800	12,867	1306	10.1

**Name on request.*

†*Day-old chicks averaged 38 USP units of vitamin A per liver.*

The groups fed Nopcay Type V stored an average of 3057 USP units of vitamin A per liver; those fed the dry product "X," 1050 USP units; those fed fish liver oil, 1306 USP units. These data confirm previous reports which indicated that vitamin A from fish liver oil and certain dry products was poorly utilized as compared to vitamin A from Nopcay Type V. The table shows the amount of vitamin A ingested by all three lots. It further shows the percentage of vitamin A stored as compared to the amount ingested. It can readily be seen that the intake of vitamin A on all three lots was essentially the same. However, the percentage of vitamin A stored in the liver by the Nopcay Type V groups compared to the amount consumed was approximately 24%. On dry product "X" it was only 8.2% of that ingested; on fish liver oil, only 10.1%.

SUMMARY

When the level of vitamin A stored is compared to the amount ingested, we find that 24% of Type V is stored, 8.2% of product "X," and 10.1% of fish liver oil. This work substantiates previous studies concerned with the improved utilization of Nopcay Type V over other forms of vitamin A.

There are significant differences in the biological effectiveness of vitamin A products. These studies confirm our previously reported findings on the subject.

NOPCO CHEMICAL COMPANY

General Offices: 60 Park Place, Newark, N.J.

Plants: Harrison, N.J. • Peoria, Ill. • Richmond, Calif.

calcium pantothenate, choline chloride, and other products

McMILLEN MEN OF THE YEAR—Dale W. McMillen (left), founder of Central Soya Co. and McMillen Feed Mills, Ft. Wayne, Ind., is presenting "Man of the Year" awards to Eural G. Rose (right) and Paul J. Coolman at a recent Central Soya gathering in recognition of their outstanding ability in several phases of the company's operations over the past years. Mr. Rose is currently assistant controller of the firm, and Mr. Coolman is manager of finance and development. The board under inspection by the three men lists the characteristics on which the "Man of the Year" selections are based.

lb.; 175 lb., 1 lb.; 150 lb., .9 lb.; 25 lb. milk replacer, .75-.9 lb. Most of these gains exceed the commonly-accepted growth standards.

4. Based on performance, 25 lb. of milk replacer used in these studies were equivalent to 107-122 lb. of whole milk

5. The variability in growth seen in the 477 calves studied and reported here points to the need for large numbers of animals and repetition of experiments before generalizations regarding the effect of management schemes on calf growth can be made.

DIFFERENCE IN THE REQUIREMENTS FOR MAINTENANCE OF DAIRY CATTLE BETWEEN PASTURE- AND BARN-FEEDING CONDITIONS — J. T. Reid, A. M. Smith and M. J. Anderson, Cornell University: Prior to 1950, information on the nutritive qualities of pastures and the supplemental feed needs of livestock grazing pastures was either qualitative in nature or based upon subjective analyses. The chemical nature of supplemental feeds was based upon the apparent deficiencies of manually sampled forage which did not necessarily represent the chemical composition of the forage consumed by grazing animals.

Since 1950, means of determining the nature and amount of forage consumed by grazing cows have been developed, and the accrued information provides a more adequate basis for deriving the needs of, and providing supplemental feed for, grazing cows. The following summarizes some of the data obtained at Cornell dealing with the nutritive value of pasture and the needs of grazing cows for energy.

The diet consumed by grazing cattle is higher in TDN, protein, fat and mineral matter and is lower in crude fiber than the whole, harvestable plant. At the usual stocking rates (which result in the consumption of less than 75% of the forage available on an improved pasture), the opportunity for selective grazing results in an upgrading of the diet by 10 to 25% of TDN. This is usually equivalent to 2@5 lb. of TDN per day.

On the other hand, the expenditure of energy caused by conventional grazing activity results in a "maintenance" requirement which is approximately 40% more than that for cows fed in the barn. For the maintenance of a 1,000-lb. cow it was estimated that 11.3 lb. of TDN per day is required for grazing, whereas only 7.9 lb. is needed under conditions of barn confinement and moderate exercise. Thus, although grazing activity represents an additional expenditure of energy, the quantity of feed needed to support it generally is more than satisfied by the higher concentration of the diet afforded by the opportunity to graze selectively. Under conditions in which heavy stocking of pastures is practiced, thus restricting the opportunity for selective grazing, the needs for grazing activity may not be compensated for in the diet consumed.

Based on the assumption that a stocking rate of 1 cow per 1 to 1½ acres will allow selective grazing, and that cows weighing 1,300 lb. will consume 30 lb. of forage per day having a TDN value of 65%, it would appear that large cows (1,300 lb.) and small cows (900 lb.) need supplemental feed while grazing improved pastures to support lactation about the level of 20 and 25 lb. per day, respectively.

THE ROLE OF ETHANOL IN RUMINANT NUTRITION — J. K. Loosli, David Drori and K. L. Turk, Cornell University: A report, published in Chemical Engineering News in 1956, that a mixture of molasses, urea, minerals, ethanol and vitamins proved to be an unusually effective supplement to corn cobs for growing beef cattle prompted the designing of a test to measure the effect of ethanol upon urea utilization.

In a nitrogen balance study at Cornell, ethanol increased the retention and biological value of the nitrogen of a ration containing poor grass hay, molasses, urea and minerals to about the same extent as an equicaloric amount of starch. Ethanol had no significant effect on digestibility or nitrogen utilization on a ration of similar feeds but containing corn to replace part of the molasses and soybean oil meal in place of part of the urea. A review of studies at other stations indicates that ethanol did not significantly improve the rate of gain of dairy heifers or beef cattle and had no influence on the grade, composition or quality of the beef carcass.

DEVELOPMENT OF AN "IN VITRO" TECHNIQUE FOR STUDYING RUMEN BIOCHEMISTRY AND NUTRITION — Harold H. Williams, Cornell University: Despite the fact that, so far as is known, the nutritional requirements of ruminants are as complex as those of any monogastric animal, their dietary needs are relatively simple. As a consequence of the great enlargement of the anterior end of the alimentary canal resulting in a compound stomach having four distinct compartments, the ruminant animal is able to carry out an extensive agricultural operation, so to speak, in his own front yard.

Ruminants hold a special place in the agricultural economy because of their power to utilize plant products unavailable to non-ruminants as food, and to concentrate and upgrade the nutrient qualities of plants. With a more general recognition of the unique potential of the ruminant animal, the past few years have witnessed an expanding interest in rumen biochemistry and microbiology.

Because of the complexities of the rumen environment and the difficulties in conducting definitive in vivo biochemical investigation of the rumen, many attempts have been made to devise in vitro systems. However, not much has been done to establish the validity of the results in terms of normal rumen function.

In Cornell experiments an attempt was made to devise an in vitro system in which growth of rumen microorganisms could be maintained and measured to serve as a basis for biochemical investigations. It appeared that a constant-flow system would be the most likely to succeed. Recently, improvements have been made to allow for collection and measurement of the gases produced during fermentation.

It is evident that a great deal of

REDUCE HANDLING . . .
SPEED UP PROFITS!

BURROWS has the CONVEYORS

EVERY TYPE . . .
EVERY PURPOSE . . .
TO SAVE YOU
TIME AND MONEY!

BURROWS
COST CUTTER
Belt Conveyor

All around, all purpose conveyor for bags, cartons, packages. An economical helper and is available with gas engine power, also electric. You can have steel or aluminum frame. 12-24 ft. lengths, Alemite fittings. Can be had with any of 9 different styles of undercarriages.

MAIL COUPON FOR FULL FACTS AND FREE NEW CATALOG!

ALUMINUM BAG CONVEYOR
where mobility is desired. 13, 15, 17 and 19 ft. lengths. 80 f.p.m. belt speed. One man operation.

"B" SERIES BELT MACHINES
To speed flow of materials through plant. Built for hard use in sizes 10 to 35 ft.

STATIONARY AND INTRA-FLOOR MODELS
In both straight and nosed over units. Sections can be added or subtracted for desired length.

"TL" ALUMINUM BAG CONVEYOR

Space saver. Ideal for trucks, warehouses and docks. 10 ft. 80 f.p.m. belt speed.

☐ Send full details, prices and catalog of BURROWS equipment.

Name .....

Address .....

City ..... Zone .... State .....

BURROWS

BURROWS EQUIPMENT CO.
1316C Sherman Ave., Evanston, Ill.

LOWEST RATES—
TURKEY INSURANCE

★ In large Stock Insurance Company—rated A+ by Bests Guide.

★ Established over 100 years ago—nationwide adjusting facilities.

★ Primary coverage on broadest named peril basis covering interest of grower and feed company and loaning institution.

SIMPLIFICATION OF RATING TERRITORIES—only split state is Minnesota, however ¾ of this state receives preferred rate treatment. Example: Range bird, not confined, Oct. 31st expiration, rate is $.06 per bird—if confined, reduce rate by 50%. Correspondingly low broiler rates. Standard broiler coverage, confined, as low as $.012 per bird.

SAME RATES QUOTED above apply to Iowa, Nebraska, and other midwest states.

WISCONSIN, ILLINOIS, INDIANA, and many other midwest states are about 30% lower than above rates (except broiler). Also, single interest insurance for Milling Company only on an "all risk" basis, including disease and practically every hazard except loss of market.

FOR COMPLETE BROCHURE FOR BROADEST, LOWEST COST TURKEY OR CHICKEN BROILER INSURANCE COVERAGE (Specify which) WRITE OR PHONE:

COTTINGHAM & BUTLER INSURANCE SERVICE, Inc.
POULTRY SPECIALISTS
Phone 3-7301 Stampfer Building Dubuque, Iowa

study is needed before the present in vitro system can be assessed properly with respect to its biochemical and microbiological similarity to that of the rumen activities in vivo. Nevertheless, the evidence obtained to date warrants the optimistic view that this in vitro system is simulating in vivo conditions and represents a useful advance in the development of an in vitro technique. It offers a predictive potential for devising definitive in vivo feeding experiments.

POULTRY

(Continued from page 10)

the amino acid levels previously determined can support adequate egg production, although egg size was depressed, probably due to a lack of non-essential amino acid nitrogen.

The results are not to be construed to indicate that 11 or 12% protein rations are fully adequate for layers, but rather the pattern of amino acids presented here can and should serve as a guidepost in formulation of laying rations with particular reference to choice of cereals.

There are no serious differences between the present estimates of requirements based on a free amino acid ration and the requirements estimated with protein-containing rations. This strengthens the view that protein nutrition is really amino acid nutrition.

METABOLIZABLE ENERGY VALUES OF FATS AND FATTY ACIDS FOR CHICKENS — Ruth Renner and F. W. Hill, Cornell University: Metabolizable energy values of several well characterized fats, mixtures of fatty acids and individual samples of oleic, palmitic and stearic acid have been determined for the chick.

Metabolizable Energy Values and Utilization of Fats and Fatty Acids

	Iodine No.	ME Cal./lb.	Utilization, %
Edible fats:			
Corn oil	122	3950	92.9
Degummed soybean oil	133	4210	99.8
Lard	65	3980	93.4
Hydrogenated fat	69	3250	76.2
Inedible fats:			
Feed grade tallow	52	2990**	70.3
		3230***	76.2
Beef tallow	44	2860	67.0
Hydrolyzed fat	61	3230	
Menhaden oil		3700	
Red fish oil		3580	
Cod liver oil		3690	
Fatty acids:			
Palmitic		—9	—0.2
Stearic		—17	—3.9
Oleic		3770	88.4
Soybean F. A.	131	3750	89.3
Lard F. A.*	67	2730	64.8
Tallow F. A.*	44	2010	47.7
Miscellaneous:			
Acidulated soybean soapstock	124	3150	75.3
Soybean lecithin		3060	86.5

*Derived by hydrolysis from the samples of beef tallow and lard studied.
**Young chicks, 2-4 weeks old.
***Older chicks, 6-8 weeks old, and hens.

Summarized in the accompanying table are the metabolizable energy values of the various fats and fatty acids studied, together with their utilization as indicated by metabolizable energy as a percentage of gross energy.

Soybean oil, corn oil and lard were of high energy value for the chick. A sample of hydrogenated vegetable fat, although more unsaturated than lard, was less well utilized. Of the inedible fats or fat by-products studied, fish oils had the highest energy value; hydrolyzed fat, acidulated soybean soapstock and soybean lecithin were intermediate; while beef tallow had the lowest energy value.

Results indicate that some factor in addition to melting point and saturated fatty acid content determines the relative metabolizable energy values of various fats.

Mixtures of fatty acids had much lower energy values than the neutral fats from which they were derived, supporting the theory that only partial hydrolysis of fat occurs in the digestive process. Composition data indicate that saturated fatty acids in such mixtures are not utilized. This is consistent with the finding that stearic and palmitic acids when fed singly are not utilized by the chick.

The utilization of fats and fatty acids measured by metabolizable energy value agreed closely with digestibility coefficients determined simultaneously. This shows that the inclusion of fat in the diet had no major effect on utilization of other components.

SPECIAL NUTRITIVE PROPERTIES OF FATS IN POULTRY RATIONS—F. W. Hill, R. Dam and L. B. Carew, Jr., Cornell University: The beneficial effect of added fat in poultry rations on the gross efficiency of growth and egg production (feed required per unit of product) has been well established. The economics of using fats in poultry rations are dependent largely on the comparative costs of Calories from fats and from grains and grain by-products.

As work has progressed on the role of fat in poultry nutrition, it has become important to learn whether some of the effects of fats may be due to properties other than energy value. Several lines of evidence have developed showing such properties.

Experiments with growing chicks have shown marked stimulation of growth rate by the incorporation of unsaturated vegetable oils or lard in a purified diet. Maximum stimulation required a level of 10% added fat. Study of the influence of corn oil on efficiency of tissue formation in growth has shown a beneficial effect on the economy of energy utilization. Neither of these effects appears to be associated with the need for polyunsaturated fatty acids. They may be due to unidentified factors associated with certain fats, to distinctive effects of very high energy levels, or to more optimal nutrient balance achieved by replacing part of the carbohydrate by fat.

Incorporation of fat in isocaloric rations for hens has shown no beneficial effect on egg production, efficiency or weight maintenance under conditions where the hens were not exposed to severe climatic changes.

STUDIES ON THE ZINC REQUIREMENTS OF CHICKS AND TURKEY POULTS—L. C. Norris and T. R. Zeigler, Cornell University: In research work at Cornell, evidence was obtained that the chick is able to satisfy the major portion of the need for zinc by exposure to the zinc-

50% Protein in a free-flowing, finely ground mixture.
MARCO MEAT & BONE SCRAPS
Consistent quality, even texture. Your choice of multi-lined paper or burlap bags.
Call collect anytime for quotations — MA 6-2803
MARCO CHEMICAL COMPANY
P. O. BOX 8 • FORT WORTH 1, TEXAS
MARCO
Special Steamed BONE MEAL
Minimum 70 BPL high in required minerals. Packed in paper-lined jute bags.
Call collect anytime for quotations — MA 6-2803
MARCO CHEMICAL COMPANY
P. O. BOX 8 • FORT WORTH 1, TEXAS
MARCO
Feeding Grade TALLOWS
Quality tallow from one of the largest animal fat processing plants in the Southwest. Guaranteed specifications in all grades of fats.
Call collect anytime for quotations — MA 6-2803
MARCO CHEMICAL COMPANY
P. O. BOX 8 • FORT WORTH 1, TEXAS
MARCO
FISH MEAL
60% protein, beautiful texture, fresh, consistent color and grind.
Call collect anytime for quotations — MA 6-2803
MARCO CHEMICAL COMPANY
P. O. BOX 8 • FORT WORTH 1, TEXAS
MARCO
DIGESTER TANKAGE
HIGH QUALITY 60% PROTEIN for hog feeds
MARCO
MOLASSES
Best quality, high sugar content. Untampered truckloads booked to your requirements.
Call collect anytime for quotations — MA 6-2803
P.S.
Remember to order your MARCOL B-75...today!

coated equipment in the laboratory. When means were taken to prevent exposure, gross symptoms of zinc deficiency were obtained. The chief symptoms were retarded growth, poor feathering, enlarged hocks, accompanied by shortening and thickening of the leg bones, and dermatitis, particularly on the foot pads.

Results of work on the quantitative requirement of the chick for zinc showed that, when a purified diet containing casein as the source of protein was fed, the requirement was between 10 and 15 mg./kg. diet. On the other hand, when isolated soybean protein was used as the source of protein in a purified diet, the requirement for zinc was between 28 and 33 mg./kg. The amount of zinc required per kg. of diet appeared to be no higher when the energy content of the diet was increased by raising the quantity of fat from 3 to 10%.

In research at the University of Maryland, zinc was found to be required by turkey poults for rapid growth, normal bone formation and feather development. These findings have been confirmed by research workers at the University of California, and in unpublished work at Cornell. The quantitative zinc requirement of the turkey poult, however, has not yet been determined.

In an experiment on the tolerance of the chick for zinc, 500 mg. of the mineral per kg. was found not to retard growth or to have any other observable detrimental effects. On the other hand, 1,000 mg. zinc/kg. was found to retard growth slightly, and evidence of anemia was observed.

RECENT RESEARCH ON THE POTASSIUM REQUIREMENTS OF CHICKS AND TURKEY POULTS—R. M. Leach, Jr., and L. C. Norris, Cornell University: Evidence reported previously showed that the potassium requirement of the chick is related to the rate of growth and the quantity of sodium and phosphorus in the diets. The results of experimental work presented in this report revealed that the protein and energy content of the diet also affect the potassium requirement of the chick.

In this work the potassium requirement was found to vary from .25 to .32% of the diet, depending upon the level of protein and energy. In the case of energy, the increase in the potassium requirement was found to be proportional to the increase in energy content, but no interrelationship between fat and potassium requirement was observed. On the other hand, a definite interrelationship between potassium requirement and protein level was demonstrated, but the requirement was not in proportion to the increase in protein content.

The results of preliminary work on the potassium requirement of the turkey poult indicate that its requirement is probably not greater than .4% of the diet.

In view of the fact that most feedstuffs, particularly those of plant origin, are generously supplied with potassium, it seems highly improbable that potassium deficiency can occur in chicks and poults fed present day types of practical rations. According to calculations, the average chick starter ration will contain .5% or more of potassium, and the average poult starter ration .6% or more of this mineral.

FURTHER EVIDENCE ON THE VITAMIN K REQUIREMENT OF THE CHICK—T. S. Nelson, Cornell University: Because of the few investigations on the quantitative vitamin K_1 requirement of the chick, experiments were conducted to determine the quantitative requirement and to compare the effectiveness of vitamin K_1 with that of menadione and menadione sodium bisulfite.

The quantitative vitamin K_1, menadione and menadione sodium bisulfite requirement of the chick decreased with age. The requirement was variable within and between experiments and was found to be more uniform when expressed as mcg./kg. chick gain. The vitamin K_1 requirement was found to be 740 mcg./kg. gain. The menadione requirement per amount of gain was approximately 600 mcg./kg. in two experiments. The menadione sodium bisulfite requirement was approximately 505 mcg./kg. gain in the testing.

When expressed on an equimolar basis, the activity of menadione was approximately half that of vitamin K_1, while the activities of vitamin K_1 and menadione sodium bisulfite were approximately equal.

Observations were made on the effect of age and cecaectomy on the vitamin K requirement of the chick. Up to 16 weeks of age, chicks on the basal diet continued to exhibit vitamin K deficiency. The prothrombin time of cecaectomized chicks was lower than that of normal chicks when both were fed the basal diet.

ENZYMES

(Continued from page 10)

but have obtained less frequent responses by adding enzymes to corn. The magnitude of response with corn is not anywhere near that with other grains.

Research suggests that the lack of a large response with barley in the Midwest and East was probably not due to varietal differences. A better explanation may be the geographical area of production. It is possible that barley grown in a more humid area may undergo water treatment before harvesting.

Sources of Enzymes

Studies showed that enzymes from three different sources gave a similar response. Enzymes elaborated by fungi and bacteria and produced during the process of malting barley all were effective.

Several enzymes, such as pepsin, pancreatin and trypsin, all from animal sources, have been tried with chicks, and no improvement has resulted. It would appear that the response with enzymes in poultry rations containing barley is not due to a correction of an insufficiency of an endogenous animal enzyme.

All of the enzymes giving responses contained alpha amylase, and it was thought that this might be the specific enzyme bringing improvement. It should be emphasized that fungal and bacterial enzyme preparations contain a multiplicity of enzymes. Studies indicate quite clearly that the active enzyme is not alpha amylase.

With our present knowledge, there is no analytical laboratory assay which correlates with a growth response of chicks to enzyme supplements. The only reliable means of assaying enzyme supplements is by a biological test.

Experiments show that the critical temperature for enzyme activity for chicks is about 70° C. and that the activity is lost at a somewhat lower temperature if the pH is below 5.

In feeding a purified enzyme preparation, maximum activity was obtained at a level of 4 mg. per pound of feed—demonstrating that an extremely small quantity of active enzyme is necessary to bring an improvement.

There may be more than one enzyme necessary to bring maximum improvement.

The specific fraction or fractions of barley being altered are unknown. It does not appear to be fiber, however. Metabolizable energy determinations showed that both enzyme supplementation and water treatment markedly increased metabolizable energy.

Research has suggested that the pentosan fraction of barley may be involved. It has been shown that digestibility of pentosan increased with greater age of the bird. Results in our laboratory have indicated that a re-

(Turn to ENZYMES, page 102)

Dealers Attention!

Here is the first in a series of advertisements to help dealers sell more and more GTA feeds . . .

Why the GTA emblem now means EXTRA RETURNS to more upper midwest farmers..

The purchase of the McCabe Feed Plants bring all these extra advantages to livestock and poultry feeders:

★ Better Service—nine more full-time sales representatives and field service personnel have been added to our total GTA force.

★ Better Feeds—the expanded GTA nutrition laboratories and the GTA experimental farm assure better-than-ever quality for all GTA feeds.

★ Bulk Feed Facilities—Many more farmers will now be able to take advantage of the lower prices available through bulk feed plant facilities and bulk feed trucks.

★ Expanded dealer network—the new GTA feeds will be available in dozens of new areas. Now, farmers all across the Upper Midwest will have a GTA dealer within easy trading distance.

★ Increased Economy—the experienced GTA feed operations mean more efficiency, more volume and wider distribution. These, in turn, mean higher quality feed—even more value per dollar than before—through your co-op. And the savings will be passed on to farmer patrons.

AND THERE'S MORE TO COME! Exciting days are ahead for our new GTA feeds. Plans call for even greater expansion of all our facilities and services. So see your GTA Feed dealer today! Get complete details on his complete line of profit-making livestock and poultry feeds. Switch now to GTA Feed—the feeds to help you better your *future* . . .

THE CO-OP WAY

GTA Feeds

GTA FARMERS UNION

SEED...FARM CHEMICALS FEED...FERTILIZER

Farmers Union Grain Terminal Association . . . . . St. Paul 1, Minnesota

DAWE'S PRESCRIPTION SERVICE

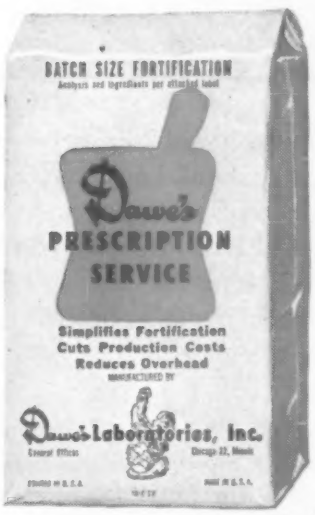
SKILL ACCURACY and DEPENDABILITY

. . . in compounding feed fortifiers

Dawe's Prescription Service brings you the ultimate in convenience, economy and dependability for your multiple-factor feed fortifiers. This personalized service custom-blends and custom-packages any practical combination and potency of vitamins, medicaments, or other additives, to your precise specifications.

Consider these important advantages of Dawe's Prescription Service. Batch-size packaging streamlines and simplifies your production. You save the time and expense of proportioning and premixing micro-ingredients, minimize the chances of costly errors and avoid unbalanced inventories of individual ingredients. One order replaces scattered buying.

Write for quotations on your feed fortifiers dependably compounded and packaged to your requirements. You'll like Dawe's consistent, uniform quality and fast, personalized service.



PLANTS:
Chicago, Illinois • Peoria, Illinois • Fort Worth, Texas • Auburn, Washington • Newaygo, Michigan • Trenton, New Jersey

WAREHOUSES:
Buffalo, New York • Columbus, Ohio
Denver, Colorado • Kansas City, Missouri
Madison, Wisconsin • Memphis, Tennessee
Minneapolis, Minnesota • Roanoke, Virginia
Los Angeles, California • Stockton, California

FOREIGN OFFICES:
Belgium—13 Courte rue des Claires, Antwerp
Italy—Corso Magenta 81/83, Milan
Mexico—Sierra Leona 755, Mexico 10, D. F.
Venezuela—Apartado 3050, Caracas

World's Oldest and Largest
Specialists in Vitamin Products for Feeds

Dawe's

DAWE'S LABORATORIES, INC.
4800 South Richmond Street
Chicago 32, Illinois

Problem of Labor Costs Proves Major Consideration for Most Mill Owners

Eight-state survey of feed men shows keen awareness of labor cost problems and provides a number of suggestions for improving efficiency of operations

By Jess F. Blair
Feedstuffs Special Writer

One problem the feed man faces every day his store or mill is open is that of meeting the payroll. Whether they are mixing feed or waiting for orders, his employees are drawing a salary which must come from the firm's margin.

This payroll is a major problem with most mill owners, as an eight-state survey in the Great Plains area revealed. Every owner or manager was questioned on the number of men he employs, how he increased their efficiency, and what use he makes of part-time employees. Has he found any way to reduce the cost of the manufacture of a ton of feed? Can employees be stimulated to a greater performance without using Simon Legree methods? Also, is the outside salesman essential, and what does he do when not on the road selling?

Outside Salesmen

In speaking of outside salesmen, a Texas mill manager said: "A few weeks after taking charge of the mill, I decided to let our outside salesman go. I found he was spending only four days a week outside, and in a territory that required only three days. During the last few months he had never reached his quota."

Another owner investigated the duties of the outside salesman and secretary and found neither was needed full time. He let his secretary go, and now the salesman handles both jobs.

Several dealers used outside salesmen and were pleased with the results. Usually this varied with the type of store, the area served and the type of farming practiced.

A Colorado mill manager had three outside salesmen who accounted for a large share of the business. "We cover a large territory," he said, "and go deep into the area served by our competitors. If I dismissed the salesmen, our business would drop 25% in two months' time."

This manager, however, keeps a close check on his salesmen. He has an intimate talk with each one at least once a month, works out problems confronting the firm, and enlightens the salesmen on new products, nutritional methods and company policy.

"Even though those jobs are essential," the manager said, "our boys know their salary must come from sales and sales alone. If they can't do the job, we'll be looking for someone who can."

Salesmen-Experts

Another situation where outside salesmen are the key men occurs when a dealer or mill is serving a large group of specialized customers. In the broiler and caged layer communities, the salesman is usually a poultry expert who takes orders in making his daily rounds. He helps cull chickens, prescribes medication and even advises customers on marketing conditions.

"You can't create a business in poultry of any kind without these outside experts," said a Texas dealer. "When I started persuading farmers to put in broiler houses, I depended heavily upon a young man I plucked right out of college. He had the technical knowledge that I lacked."

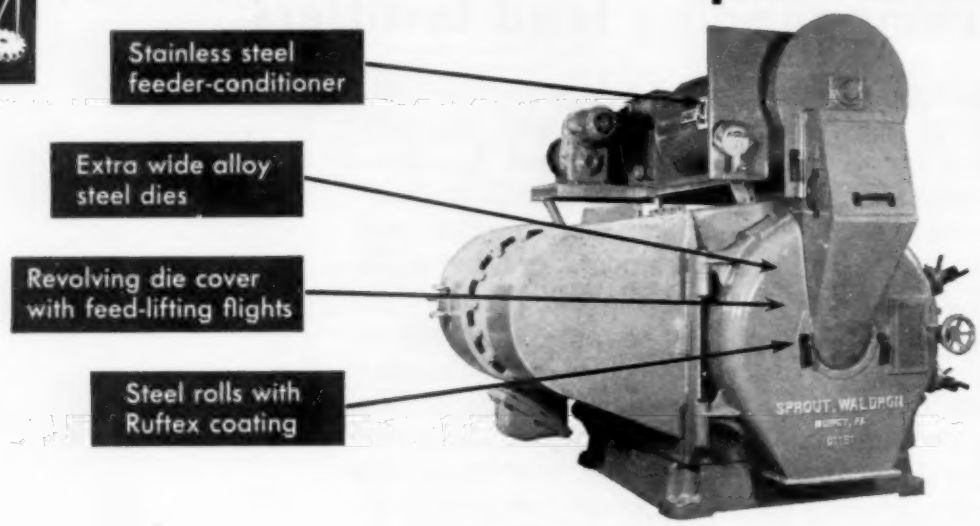
This owner, as well as several others, sounded a note of warning, however, in hiring young college graduates. Not every graduate knows how to meet farm people and work with them. Not only does the topnotch service man know his business, but he also knows how to make friends and soothe disgruntled customers. The longer he stays with a firm the more valuable he becomes.

In addition to selling feed, the out-

SW Data Sheet

Sprout-Waldron

Super Pellet Ace


Stainless steel feeder-conditioner
Extra wide alloy steel dies
Revolving die cover with feed-lifting flights
Steel rolls with Ruftex coating
SPROUT, WALDRON

specifications

Floor space	6′ 5¼″ x 6′ 3¼″
Height to feed inlet	5′ 4″
Size of feed inlet	12″ x 18″
Size of outlet discharge	8¾″ x 15″
Size of steam inlet pipe	2″
Feeder motor	2 hp.
Mill motor	100 to 125 hp.
Weight, mill with feeder-conditioner	4725 lbs.
Weight, STD.TEFC 100 hp. motor	1700 lbs.
Recommended boiler hp. for 100 hp. mill	40 hp.

SUPER PELLET ACE with wide wide die

More and more feed millers are discovering that higher pelleting profits are possible with the Super Pellet Ace. High volume production, coupled with low power and low maintenance, makes this gearless, belt-driven pellet mill the most economical and profitable on the market.

construction details

The corrosion-proof feeder-conditioner offers perfectly controlled feeding, uniform moisture and heat penetration of feed, plus low upkeep. The stainless steel spout is easily removed for fast die changes or roller repairs. A built-in dial thermometer enables operator to maintain uniform temperature of feed at all times.

The hinged die casing provides easy access for die changes and greatly reduces clean-up time. The Super Pellet Ace utilizes a V-belt drive which eliminates gears and their maintenance while applying the full horsepower to extra wide dies for increased capacity. A revolving die cover and feed-lifting flights assure even wear and longer life of special alloy rolls. The entire mill requires only four bearings. Relatively quiet and vibration-free operation is secured.

Sprout-Waldron pellet mills are available in smaller, lower powered designs.

We also manufacture the most complete line of pelleting accessory equipment such as driers, coolers, and crumblizers.

Write for Bulletin No. 201

FD/104

SPROUT-WALDRON
The Best in Processing Equipment Since 1866
MUNCY, PENNSYLVANIA, U.S.A.
Modern equipment for—size reduction • mixing and blending • bulk handling equipment • size classification • pelleting and cubing

Egg Shell Quality
begins with
EGGSHELL BRAND
Oyster Shell

Poultrymen are being told the EGGSHELL BRAND story in advertisements and point-of-purchase displays wherever EGGSHELL BRAND Oyster Shell is sold.

Take advantage of this complete promotional program. Sell the really digestible, soft reef shell that has become the standard of the industry.

EGGSHELL BRAND OYSTER SHELL
a product of
OYSTER SHELL CORPORATION
BALTIMORE, MARYLAND

side salesman is often needed to increase sales of allied products. A Wyoming dealer hired an experienced chemist to build sales for farm chemicals. He started working with a group of new vegetable farmers who had not traded at the store. Because of the chemist's practical help and efforts in solving the farmers' management problems, the store built a very large trade in fertilizers and insecticides.

"The outside salesman is not needed here," said a Nebraska dealer, who was serving 100 small farmers. "These people keep a few cattle and hogs and raise their own eggs. They buy in small quantities and come to town in their own pick-ups or trucks. I make a few trips out of town, but never found a full-time salesman needed."

Mill Hands

While the outside salesman may or may not be needed, every owner needs his mill hands. And this is where the wasted efficiency and salary are often found. Some of the smaller mills, in particular, find their feed profits consumed by high labor costs.

In one small mill this writer noticed five men at work mixing feed. Two were operating the machinery, one was sewing sacks, while two more were loading the sacks of feed on wheelbarrows and pushing them across the room. Later they would be loaded back into wheelbarrows and pushed into trucks, which would require more expensive labor.

In commenting on the feed business, the owner said: "There is no money in feed, anymore. If I didn't buy grain, I couldn't stay in business."

That owner was paying out extra dollars in wages for each ton of feed mixed; yet it is possible in a large, efficient mill to mix feed for less than $2.50 a ton. This is what one Oklahoma manager found when he ran a check list on the firm's grinding and mixing operations.

"After a week of observation and talking to the men, we got this down to $2.25," the manager said, "and I think it might be brought down another dime or 15¢ a ton. But in an old mill, the cost will be higher."

Part-Time Workers

However, several mill owners have lowered payroll costs, even in the older mills. One feed man in Kansas found the answer in part-time workers. He trained three or four young farmers living nearby and pays them on an hourly basis. When business is slack, as in the dead of winter, his employee load is at a maintenance level.

No so another dealer who had three or four mill hands busy only about half the time. When asked about this, he said business was slow, but he kept the workers the year around because they were family men and needed the job.

A similar instance revealed the owner's gross sales were plenty high for the size mill, but a look at his books showed only a $4,000 profit for the year. He, too, kept all his hands the year around.

Another mistake, some dealers say, is in hiring too many high-salaried experts. "It's foolish to hire a college graduate to load feed," said a Kansas owner, who then pointed to a husky young man of about 22. "That boy is strong as an ox and as willing, but he's not overly intelligent and he couldn't sell anything. But for the heavy work, he's worth more than any two experts put together."

When this incident was told to a South Dakota mill owner, he said: "That is exactly right. You must watch that payroll all the time. I often make a survey of the men and their jobs. If I find that a white-collared worker must work in the mill to stay busy, then I know he must be dismissed or else create enough new business to justify him. I have an expert mill foreman, and it's his responsibility to make feed at the lowest possible cost. This means

WELL, HERE'S A TIP:

Investigate the exclusive profit-proved Ultra-Lifed Programs. Feed manufacturers from the Atlantic to the Pacific, from Canada to South America, are really building business with the outstanding, exclusive, Ultra-Lifed programs. **Write today for full details—no obligation**

Ultra-Life LABORATORIES, INC.

Main Office and Plant — EAST ST. LOUIS, ILLINOIS

One of the country's oldest and largest manufacturers of vitamin and trace mineral products.

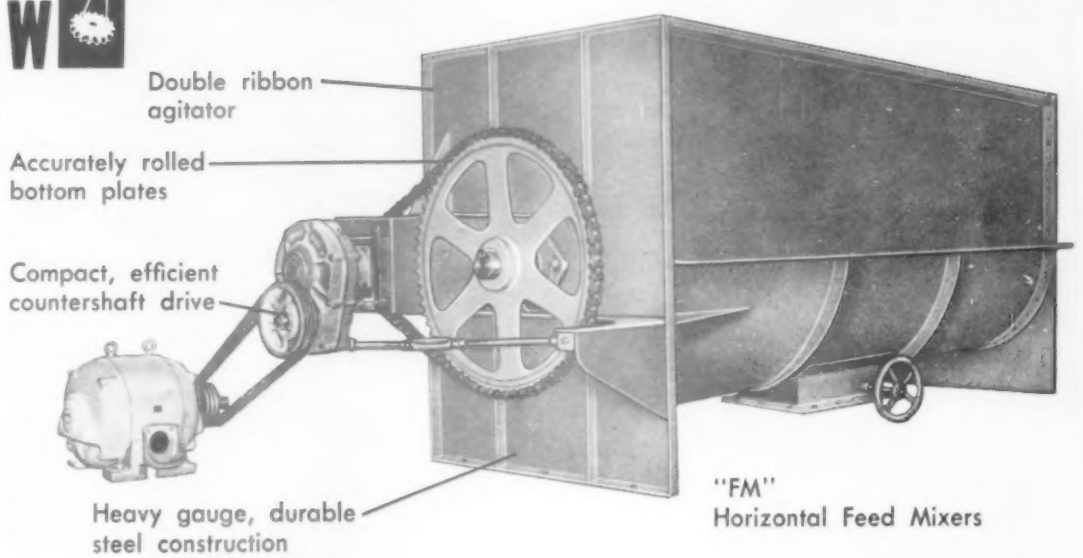
McCabe Grain Company Limited

WINNIPEG-VANCOUVER

LONDON, ENGLAND

Schwartz & Co.,(Grain) Ltd.
Victoria Products and Grain
(oversaas agents) Ltd.

SW Data Sheet — **Sprout-Waldron**


Double ribbon agitator
Accurately rolled bottom plates
Compact, efficient countershaft drive
Heavy gauge, durable steel construction
"FM" Horizontal Feed Mixers

"FM" Feed Mixers

The Sprout-Waldron "FM" horizontal batch mixer was developed specifically for the feed milling industry. Economical to operate, built for trouble-free performance, and low in first cost, it is designed for rapid yet thorough mixing and serves equally well for low, medium or high capacity needs. Where efficient mixing at highest rates and lowest costs is paramount, the "FM" leads the field.

construction details

The mixer body is constructed of heavy gauge steel, continuously welded. The rugged, all-welded, double ribbon agitator forms a perfect circle and insures rapid, intimate mixing. It is designed for end discharge although center discharge can be furnished. The end plate construction includes reliable shaft seals which prevent leakage and avoid entry of oil or foreign material.

Standard discharge gate is of the curved slide type, conforming to the contour of the mixer body, and is easy to operate. Air operated discharge gates are an optional feature. Multiple gates in tandem are also available.

Specifications

Size Number	Capacity	Swept Volume Cu. Ft.	Discharge Opening Inches	Agitator Speed R. P. M.	H. P.	Approx. Shipping Weight
1 FM	1 Ton	63	14x16	30	10	3500
2 FM	2 Tons	150	14x16	23	20	5000
3 FM	3 Tons	191	16x16	20	25	7000
4 FM	4 Tons	254	16x16	18	30	8500

Bearings are sealed, anti-friction, self-aligning, flange-type units that require a minimum of lubrication. The standard drive consists of an integrally mounted countershaft and a roller chain drive from the countershaft to the mixer shaft.

A surge bin is available for rapid, automatic batching. The combination of a scale and hopper, an "FM" mixer and a surge bin actually produces three batches in process at all times, permitting a continuous operation.

For complete details on the "FM" series, write for Bulletin 112-A.

FD/113

SPROUT-WALDRON

The Best in Processing Equipment Since 1866

MUNCY, PENNSYLVANIA, U.S.A.

Modern equipment for—size reduction • mixing and blending • bulk handling equipment • size classification • pelleting and cubing

the two of us must constantly check on the performance of the men and equipment."

The manager of a large company system had recently fired two branch managers for inefficiency. One was known as a "good Joe," who was too easy on his workers. They loafed on the job, were careless in their work and made no effort to give extra service to customers. The other man spent too much of his time with mill operations and didn't promote business. He was a machinist at heart and was not qualified personally to meet and mix with farmers.

"We try to be humanitarian," said the company manager, "but our first aim is to sell feed at a profit. This means getting out and creating new business, and it also means holding down costs to the lowest possible figure. No bunch of workers will do that without close supervision."

The consensus of successful mill owners is that every feed man can save money by doing a bit of investigating. He should run a check sheet on every job in the mill, including his own. Is the employee fitted for the job? Is he doing his best performance? Can new methods be installed to increase that performance? Often the owner may find an employee better fitted for some other role.

One owner found, for instance, that a young man spent too much time discussing management problems with the farmers. The owner put him on a delivery truck and his ability to meet people paid off in increased sales.

"Never keep a dissatisfied employee," the mill owner said. "Try to find the source of his dissatisfaction and remedy it. But if he is just plain lazy or a trouble-maker, then get rid of him at once. Such a man is too expensive, no matter what salary you pay him."

Egg Producer Plans To Build Feed Mill

MOBILE, ALA.—A layer operation here which has developed from a 300-hen farmyard to a 30,000-layer farm enterprise in the past six years will add a feed mill and competely mechanized processing facilities in the near future.

Mr. and Mrs. H. L. McFarland, Mobile County, announced recently that their farm enterprise, which had reached 19,000 layers this summer, will be expanded to 30,000 laying hens by Jan. 1.

"I saw I had to have volume to make a profit," Mr. McFarland explains.

Main production facilities are located at the farm, and processing facilities are at nearby Spring Hill. Processing facilities include a cooling room which accommodates 400 cases and a processing room where eggs are graded, candled and packed. The caged layers are in 14 houses (more are being built) with dimensions of 360 by 14 ft. Houses for the cages are pole-type structures made from reject cross arms from utility poles, chicken wire, sacks and rough lumber. The roofs are made of rough 2 by 4-in. framing with rough lumber sheathing spaced 6 to 8 in. apart. Chicken wire is put on the spaced decking to provide support for the roofing paper used as a final cover. The cages are supported in racks.

Mr. McFarland said records are kept on all hens. They have an average production of 200 eggs a year and 12 to 15 months average production before culling.

U.S. Poultry Made Available in Holland

CHICAGO — Poultry produced in the U.S. is being offered to Dutch housewives for the first time in history, according to a recent announcement from the Institute of American Poultry Industries, Chicago.

Turkeys are appearing in the freezer cabinets of leading Dutch stores under a recent agreement. Sales of frozen, ready-to-cook U.S. birds are aided by colorful promotional posters supplied by the National Turkey Federation, Poultry & Egg National Board and the IAPI, which are among members of the International Trade Development Committee, the announcement said.

Although the Dutch are the world's largest exporters of poultry meat, the birds exported are largely the by-product of their egg-laying industry. The Dutch housewife is not familiar with broad-breasted turkeys and chickens.

C. E. Sidler, European representative of the IAPI, said U.S. poultry is being allowed entry into the Netherlands "primarily because of the work of Robert Reed, agricultural attache, other personnel of the Foreign Agricultural Service and representatives of the International Trade Development Committee." The IAPI, representing the poultry industry's International Trade Development Committee, is a cooperator with the FAS in developing the markets. A joint U.S. and Dutch promotion program for poultry is now being formalized, Mr. Sidler reported.

Pfizer Offers Award For Collegiate Contest

CHICAGO—Cash prizes will be offered again this year by the agricultural division of Chas. Pfizer & Co., Inc., to the top three teams in the intercollegiate meat judging contest to be held in Chicago, Dec. 2.

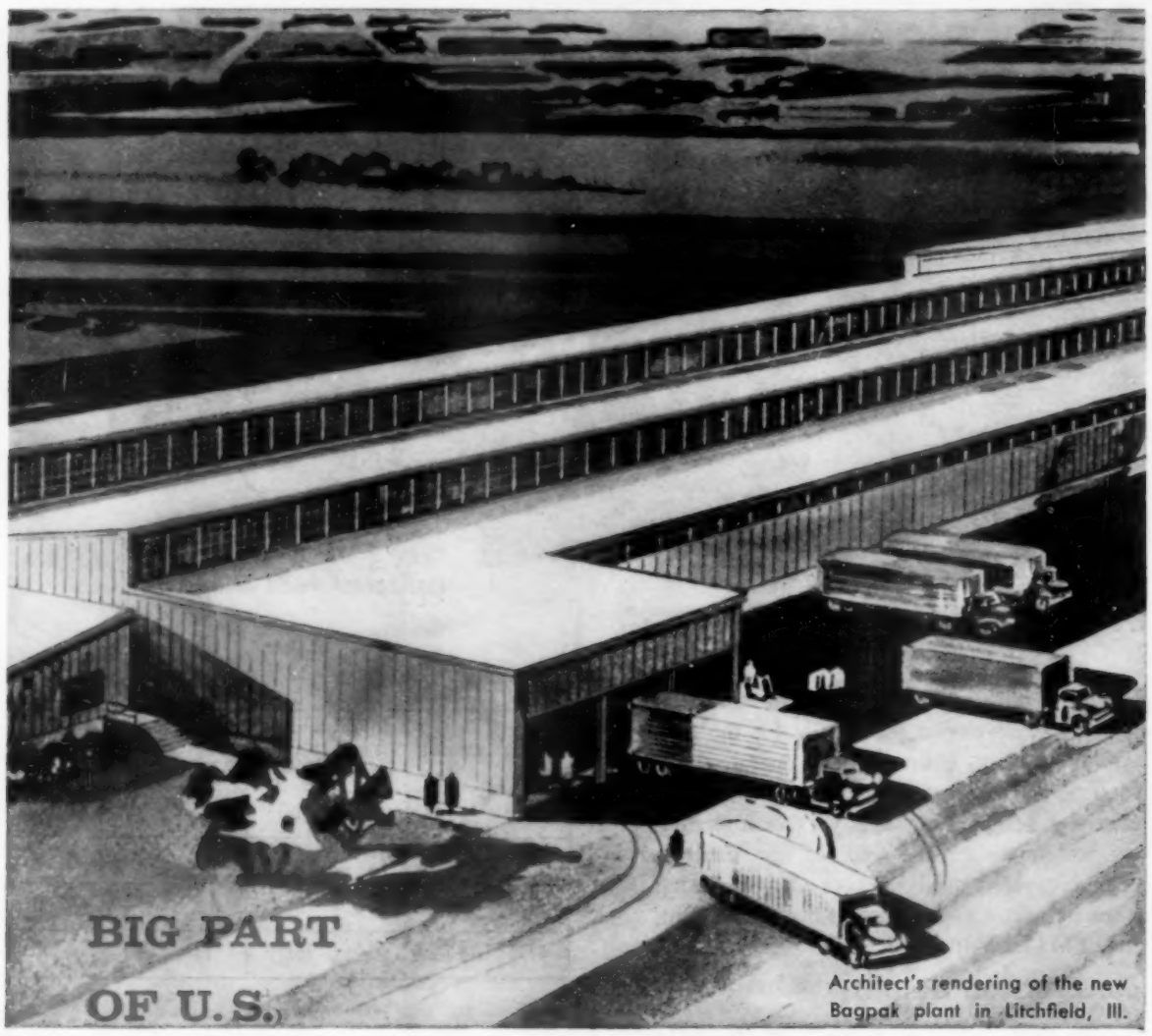
The competition, a feature of the International Livestock Exposition, is sponsored by the National Live Stock and Meat Board.

In 1957, the University of Wisconsin team won the $1,000 first prize offered by Pfizer. Runners-up were Kansas State College, receiving a $500 prize, and Oklahoma State University, receiving $250.

Presentation of the 1958 awards will be made on Dec. 3. At the same time, the first place team will take possession for one year of a rotating challenge trophy provided by the Live Stock and Meat Board.

Prize money received by the three high scoring teams goes to their respective schools to finance appropriate research activities.

Hugh O. Dermody, assistant general manager of the agricultural division, said, "The Live Stock and Meat Board took a farsighted step in creating this contest. In providing the awards, Pfizer shares the opinion that industry generally must contribute wherever and whenever it can to the training of our agricultural leaders of the future."



Architect's rendering of the new Bagpak plant in Litchfield, Ill.

GETS FAST, SHORT-HAUL DELIVERIES OF INTERNATIONAL MULTIWALL BAGS!

You benefit directly from International Paper's modern, new Bagpak plant in Litchfield, Illinois.

If your plant is situated in the heart of this busy mid-western market, you now have an even closer source for the full line of International multiwall bags.

Industry in other parts of the United States benefits by faster and better service too. For Litchfield's capacity eases the demand on our other plants and warehouse facilities.

With this increase in manufacturing facilities and distribution efficiency, it will pay you to remember that wherever you are, you're never far from International Paper . . .

your most dependable source of supply . . .

INTERNATIONAL PAPER

BAGPAK DIVISION, N.Y.17, N.Y.

GRAN-I-GRIT'S

New Grit Feeding Program Has Definitely Proven that Broiler Growers and Egg Producers Can Make More Money from Feed Without Adding One Cent to their Costs

It's IMPORTANT NEWS to Broiler Growers and Egg Producers when, by not adding one cent to their costs, they can increase their profits.

Results from GRAN-I-GRIT'S New Grit Feeding Program have definitely proven that this is exactly what Broiler Growers and Egg Producers can do if they feed larger sizes of GRAN-I-GRIT.

Larger sizes of GRAN-I-GRIT not only grind feed finer and more efficiently but they also keep the digestive tract open for full feed utilization by completely grinding feathers and fibrous litter that all birds eat.

Small grit that passes through the digestive tract, rather than staying and working in the gizzard, takes space needed for feed.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Mr. Gurney C. Hodges, top broiler producer of Low Gap, North Carolina, states:

Using a side by side test—Mr. Gurney Hodges made an EXTRA $125.85 on 4,000 Broilers

"I doubted the value of grit for broilers until I was persuaded recently to make a comparative test. The amazing results which I obtained are listed in adjoining column. I followed GRAN-I-GRIT'S recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until sold. The birds consumed 180 lbs. of chick growing size grit and 450 lbs. of broiler and hen size grit. I was well pleased that feeding GRAN-I-GRIT made me $125.85 extra and believe that feeding the larger grit sizes was responsible for this outstanding result. I have used GRAN-I-GRIT on other broiler flocks with equally good results."

	White Rocks Without Grit	White Rocks with GRAN-I-GRIT
No. Birds Started 2/2/56	4,000	4,000
No. Birds Sold 4/10/56	3,854	3,824
Percentage Livability	96.35%	95.6%
Age When Sold	9 wks., 5 days	9 wks., 5 days
Average Weight per Bird	3.27 lbs.	3.479 lbs.
Total Lbs. of Broilers Sold	12,620 lbs.	13,304 lbs.
Bags Broiler Chow Fed	333	332
Lbs. of Meat per 100 Lbs. Feed	37.89	40.07
Lbs. of Feed per Lb. of Meat	2.638	2.49
Broiler Selling Price per Lb.	19c	19c
Receipts from Sale of Broilers	$2,397.80	$2,527.76
Total Cost Chicks, Feed, Sanitation	2,359.07	2,353.73
Labor Profit and Grit Cost	38.73	174.03
Cost of GRAN-I-GRIT 0 lbs. @ 1½c..	0	630 lbs. @ 1½c 9.45
Labor Profit	38.73	164.58
Extra Profit from use of GRAN-I-GRIT..	0	125.85

Get Full Details— GRAN-I-GRIT'S New GRIT FEEDING Program

Top poultrymen use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the best profit producing grit they can use. GRAN-I-GRIT is insoluble . . . does not dissolve and cannot change the mineral balance of your feed.

We have a new GRAN-I-GRIT circular that gives full details of the New GRAN-I-GRIT program of feeding larger sizes of grit . . . the program that is proving so successful with both Broiler Growers and Egg Producers. Write today for a free copy.

GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor and in 25, 50 and 80-lb. multiwall paper bags.

GRAN-I-GRIT HOLDS THE BIRD'S EYE

Selected 20 to One over other Types of Poultry Grit

Chicks, broilers, pullets or layers must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it. Side by side tests on poultry farms and by leading poultry authorities have proven that poultry of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . (as much as ten, fifteen, twenty to one) over grit of other colors.

NORTH CAROLINA GRANITE CORP., Mount Airy, North Carolina

Member of Granite Grit Institute of America

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

Methionine Supplementation Of Laying Hen Feeds

By R. H. Harms and C. R. Douglas
Florida Agricultural Experiment Station

The protein requirement of the laying hen has gained considerable attention during recent years. Some research workers have found that diets containing 15% protein would support maximum egg production under their particular conditions, while others have suggested that a level of 13% protein was adequate.

It has been the experience of these writers (Hochriech et al., 1958, Poultry Sci., July, page 949) that the diet of laying hens must contain at least 17% protein for maximum egg production. It should be pointed out that during this test the rate of egg production was maintained at approximately 70% for the 11 months experimental period.

It is a well-known fact that the quality of the protein source used will greatly influence the total level of protein that must be included in the diet in order to support normal egg production. However, soybean oil meal has been the principal source of protein in most of the diets used for studying the protein requirement for the laying hen and is the source most commonly used in commercial laying hen feeds.

Amino Acid Content

Calculation of amino acid content of such laying feeds indicates the first limiting amino acid to be methionine or, more correctly expressed, sulfur-containing amino acids (methionine and cystine). The National Research Council has established the hen's dietary requirement to be 0.28 and 0.25% of the diet, respectively, for methionine and cystine, or a total of 0.53% sulfur-containing amino acids.

However, it should be pointed out that these requirements were established with experimental results obtained from hens which were not laying at such a high rate of production as we normally expect from hens furnished by present-day poultry breeders.

In view of these considerations it seemed desirable to again determine the amount of protein that must be included in the diet to support maximum egg production with laying hens which were capable of producing at an egg production rate of approximately 70% for a period of one year. Also, since calculations had indicated methionine to be the first limiting amino acid, it was decided to supplement the experimental diets with a synthetic source of methionine activity.

EDITOR'S NOTE: The accompanying article is a report on an experiment by the authors to determine the amount of protein that must be included in the diet to support maximum egg production with laying hens capable of producing at an egg production rate of 70% for one year. Also, since calculations had indicated methionine to be the first limiting amino acid, it was decided to supplement the experimental diets with a synthetic source of methionine activity. The authors are on the staff of the poultry husbandry department at the Florida station, Gainesville, Fla.

PROCEDURE: Ninety six single comb White Leghorn pullets, maintained in individual cages, were used in this study. These pullets were reared on range and had been full-fed on a medium energy growing mash. They had reached an egg production rate of approximately 30% before being moved into the cage laying house at which time they were randomly assorted into the various experimental groups.

The composition of the basal diets is shown in Table 1. These are corn-soybean type diets. However, 2.5% menhaden fish meal was included. Each of the basal diets was fed with and without the addition of 0.075% MHA* (methionine hydroxy analogue) making a total of six experimental diets. Duplicate lots of eight pullets per lot, maintained in individual cages, were fed each of the experimental diets.

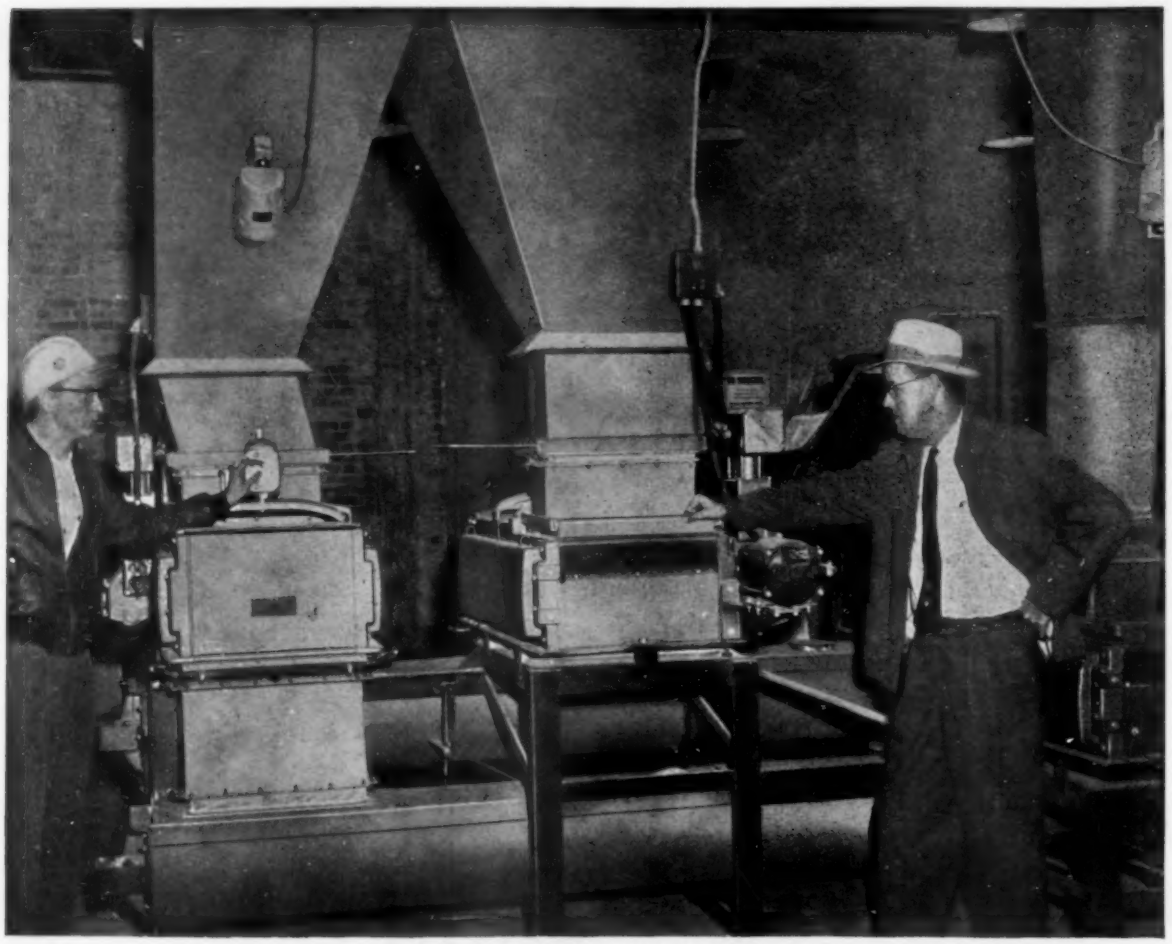
Daily collections of eggs were made

*Registered trademark, Monsanto Chemical Co., St. Louis.

TABLE 1. Composition of Basal Diets

	Diets		
	1 (16.7%)	2 (15.7%)	3 (14.7%)
	lb./cwt.		
Ground yellow corn	67.2	67.7	68.2
Soybean oil meal, 44%	18.4	15.1	11.7
Wheat gray shorts	...	2.8	5.7
Alfalfa meal	5.0	5.0	5.0
Fish meal, menhaden, 60%	2.5	2.5	2.5
Limestone	3.0	3.0	3.0
Steamed bone meal	3.0	3.0	3.0
Salt, iodized	0.4	0.4	0.4
Manganese sulfate (gm.)	8	8	8
Vitamin premix*	0.5	0.5	0.5

*Supplies per pound: 199,600 I.U. vitamin A, 64,600 I.C.U. vitamin D_3, 600 mcg. vitamin B_{12}, 200 mg. riboflavin, 400 mg. ca. pantothenate, 900 mg. niacin, 9 gm. choline cl., 2,500 I.U. vitamin E and 50 mg. menadione sodium bisulfite.



Merchen Scale Feeders blending salt and trace minerals at Carey Salt Co., Hutchinson, Kans.

MERCHEN SCALE FEEDERS

offer continuous dry blending by weight

The Carey Salt Company produces salt blocks for cattle that contain a percent blend by weight of nutritional minerals. W&T Merchen Scale Feeders were selected for the blending operation.

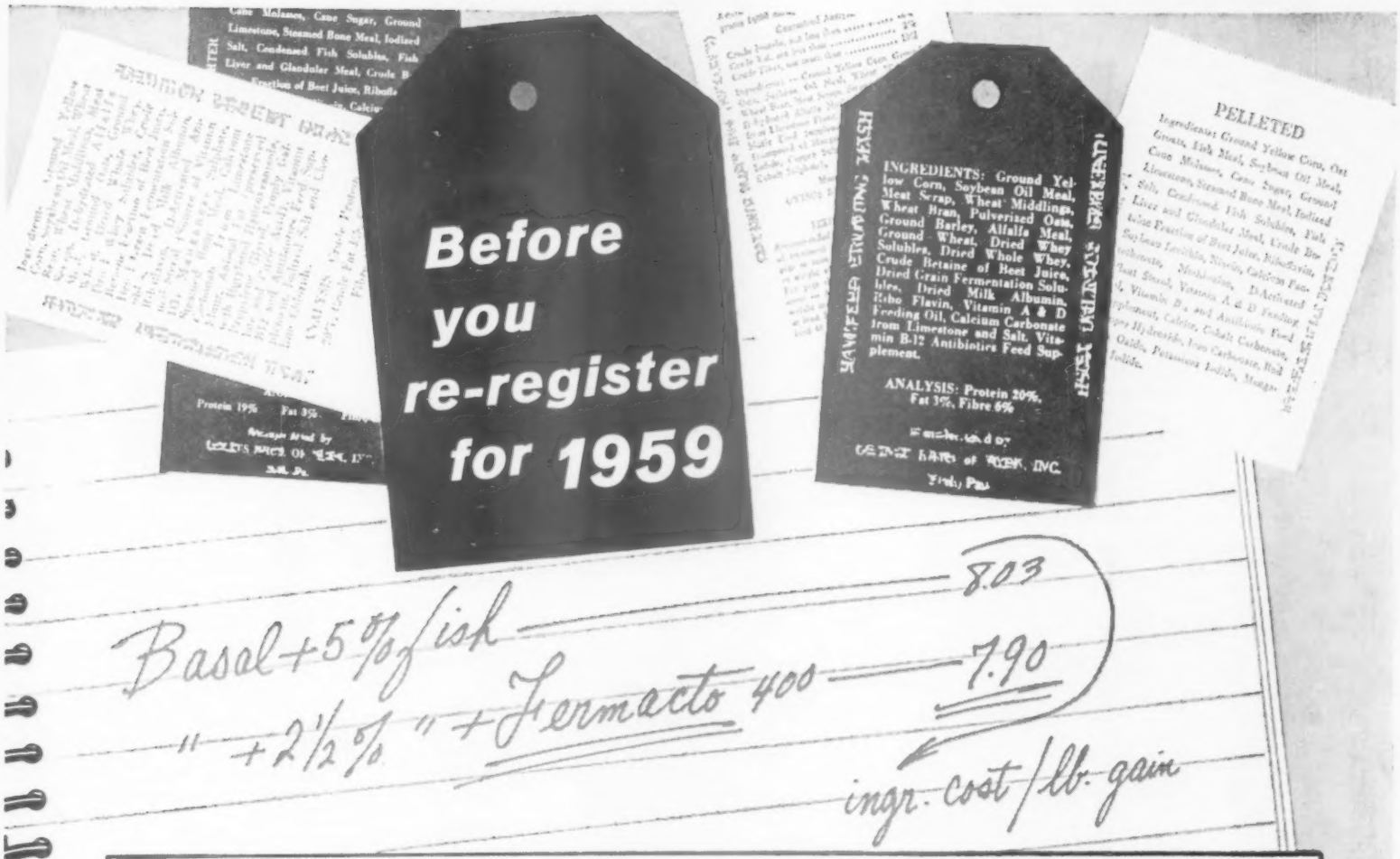
If accurate blending of dry, free flowing materials is important to your production, Merchen Scale Feeders offer feed rates from 3 ounces to 3000 pounds per minute, always maintaining accuracy within 1% of the feed rate. The feeders compensate for changes in material density to maintain a constant feed by weight.

Where a number of ingredients must be blended, Merchen Feeders can be electrically or pneumatically controlled from other plant equipment for automatic operation. Send for our booklet M-37, "The Best Weigh is the Merchen Way."

WALLACE & TIERNAN INCORPORATED
25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Feed Mixers Products
COLBY
PULVERIZED
Oats or Barley
ROLLED OATS
AND
FEEDING OATMEAL
COLBY MILLING, INC.
COLBY, WISCONSIN
PHONE LD-360-266
TWX Colby 8866


Before you re-register for 1959
INGREDIENTS: Ground Yellow Corn, Soybean Oil Meal, Meat Scrap, Wheat Middlings, Wheat Bran, Pulverized Oats, Ground Barley, Alfalfa Meal, Ground Wheat, Dried Whey Solubles, Dried Whole Whey, Crude Betaine of Beet Juice, Dried Grain Fermentation Solubles, Dried Milk Albumin, Riboflavin, Vitamin A & D Feeding Oil, Calcium Carbonate from Limestone and Salt, Vitamin B-12 Antibiotics Feed Supplement.
ANALYSIS: Protein 20%, Fat 3%, Fibre 6%
PELLETED
Basal + 5% fish — 8.03
" + 2½% " + Fermacto 400 — 7.90
ingr. cost/lb. gain

consider these farm-tested
BORDEN *Feed Supplements . . .*
to cut your costs without sacrificing performance

FERMACTO 400	the new multiple blend of fermentation factors
MG 2X 400	economical new blend of concentrated whey and fermentation factors
MG 2X-AP	all-purpose poultry feed supplement providing MG 2X 400 plus extra fish factor and essential micronutrients
OMNI-MIX	complete whey-fish-fermentation mix plus micronutrients, for economy plus quality in poultry feeds
BORDEN'S 300	economical laying mash supplement providing Fermacto 400 plus micronutrients

also — supplements for hog, cattle, and small animal feeds, providing varying necessary levels of unidentified growth factors, antibiotics, and other micronutrients

THE *Borden* COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue • New York 17, N. Y.

Laboratories and test farms
at Elgin, Illinois

Backed by Borden research...serviced by trained nutritionists . . . supported by the industry's finest "personalized" feed promotion programs...realistically priced for profitable performance

TABLE 2. Rate of Egg Production and Feed Required to Produce a Dozen Eggs When Pullets Were Fed Various Levels of Protein With and Without Supplemental MHA.

% Protein in diet	Production %	Lb. feed/doz. eggs
16.7	59.7	4.94
+ 0.075% MHA	68.1	4.35
15.7	58.9	4.88
+ 0.075% MHA	66.6	4.26
14.7	56.2	4.94
+ 0.075% MHA	69.0	4.09
— MHA	58.3	4.92
+ MHA	67.9	4.23

and recorded on an individual hen basis. At the end of each 28-day period, rate of egg production and pounds of feed required to produce a dozen eggs were calculated. Rate of egg production obtained for each experimental diet was calculated on a hen-day basis. However, for statistical analysis, rate of egg production for each individual hen was used.

RESULTS: The addition of 0.075% MHA to the laying feeds used in this experiment produced a significant increase in the rate of egg production at all levels of protein (Table 2). There was no significant difference in egg production due to protein levels when 0.075% MHA was present.

This would indicate that either the methionine and cystine content of the 14.7% protein diet containing 0.075% supplemental MHA was adequate to support maximum rate of egg production, or a deficiency of another amino acid which could not be corrected by increasing the protein level limited the production of the birds.

It may be noted (Table 3) that the 16.7% protein diet was calculated to contain 0.534% methionine and cystine. According to N.R.C. recommendations this should have been adequate. However, for these pullets, which were producing at a rate of 70%, this level was not sufficient since an increase in egg production was obtained from supplemental MHA.

The methionine and cystine content of the 14.7 and 15.7% protein diets was 0.469 and 0.503, respectively. As these levels are less than N.R.C. recommended levels, the increase in egg production and improvement in feed utilization from the addition of MHA to these diets should not be too surprising.

Methionine Deficiency

As the level of protein in the diet was increased, an increased rate of production was obtained (Table 2). Even though additional protein in the diet supplied more methionine, the diet containing the highest level of protein was still deficient in methionine, since the addition of MHA to this diet resulted in an increased rate of egg production.

The amount of feed required to produce a dozen eggs regardless of dietary protein level was significantly reduced by the addition of 0.075% MHA to the diet. When the level of protein in the diet was decreased in the presence of supplemental MHA, an improvement in feed utilization was noted. A possible explanation may be that, when the diet containing 14.7% protein was supplemented with MHA, a better balance of amino acids was obtained, resulting in better protein utilization.

TABLE 3. Calculated Analysis of Diets

	Diets 1	2	3
Productive energy, cals./lb.	924	922	920
Crude protein, % (calc.)	16.7	15.7	14.7
C/P ratio	55.3	58.7	62.2
Crude fat, %	3.07	3.17	3.26
Calcium, %	2.33	2.32	2.31
Phosphorus, total %	.814	.810	.805
Inorganic, %	.598	.594	.589
Riboflavin, mg./lb.	3.03	2.99	2.95
Niacin, mg./lb.	19.67	20.44	21.20
Pantothenic acid, mg./lb.	7.51	7.43	7.35
Choline, mg./lb.	535	501	468
Vitamin A, I.U./lb.	8004	8011	8019
Vitamin D_3, I.C.U./lb.	646	646	646
Vitamin B_{12}, added mcg./lb.	6	6	6
Methionine, %	.306	.285	.263
Cystine, %	.234	.218	.202
Methionine + Cystine, %	.534	.503	.469
Lysine, %	.817	.734	.651
Tryptophan, %	.213	.185	.177
Arginine, %	1.034	.942	.85

APPLICATION: These results would indicate that more research is needed on the use of supplemental MHA in laying feeds with the possibility of utilizing such feeds at a lower level of total protein. With the increased demand for all animal feeds, there is a strong possibility that ingredients with high protein content are going to become short in supply, which would result in higher prices for these ingredients. Recently, the price of synthetic sources of methionine has been substantially reduced, encouraging the evaluation of its use in laying rations.

Certainly, more research is needed to determine the exact requirement of methionine at the various levels of egg production to permit the formulation of more economical laying hen feeds.

To Discuss Hay Pellets At Washington School

SEATTLE — Pelleting of hay as well as other feeds will come in for discussion at the Feed Mill Production School to be held next February, according to an announcement from John G. Wilson, manager of the Washington State Feed Assn. The association sponsors the school, which will be held Feb. 11-12, 1959, at the Leopold Hotel in Bellingham, Wash.

"Each subject discussed at the school will be keyed to the specific milling situations existing in the Pacific Northwest," Mr. Wilson said. "An example of this is pelleting. In this area, the pelleting of alfalfa hay is becoming increasingly important. This subject will be covered from the standpoint of both standard pellets and the new hay wafer."

Mel Erickson, chairman of the production school, said that equipment required to handle the pelleted product will be given close study.

BULK FEED FIRM

PORTERVILLE, CAL. — McCray's Bulk Feeds began operations here recently. Glenn L. McCray is owner.

Shelley says

Come rain or come shine

Shellbuilder is ready to serve you with the best pure crushed reef oyster shell. **Order Shellbuilder today sure.**

SHELLBUILDER COMPANY • MELROSE BUILDING • HOUSTON, TEXAS / *Territories open for qualified brokers.*

Over 54 Years of Dependable Brokerage Service
Established 1904
EDWARD E. SMITH AND CO.
3166 Maple Dr., N.E. Atlanta 5, Ga.
Phone—CEdar 3-1108 TWX—AT-30

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

...PROVED ON MORE THAN 100 MILLION BIRDS!

Unistat®

Dr. Salsbury's unique new coccidiostat for chicks, broilers and growing chickens

Dr. SALSBURY'S LABORATORIES

DETACH INSERT AND FILE

Growers say Unistat is best coccidiostat yet...

The true value of any new poultry health product is never really known until it has been widely used in the field—under all kinds of conditions. **Grower experience is what counts.** Growers must **know** that Unistat not only controls coccidiosis but does so at a substantial profit to them. Then and only then should you use it in your feeds. Unistat has now been fed to more than 100 million birds. The following are typical of many letters being received at Dr. Salsbury's Laboratories from large commercial poultrymen (names on request).

DELAWARE

"Our feed efficiency has improved more than 10 points over the same period of last year while coccidiosis has not been a problem with us. We feel that the pigmentation, finish, and quality of our birds has been greatly improved with Unistat feed. Unistat is now in our ration 100%, but we field-tested a number of coccidiostats before we made this change." (This is from an independent grower raising 1,000,000 birds a year.)

NORTH CAROLINA

"This is the first flock of broilers I have ever grown without trouble from coccidiosis. These birds had better color than birds grown before. I am completely satisfied with the results I have gotten from Unistat." (The flock referred to had a feed conversion of 2.33—or, 43 lbs. of meat per 100 lbs. of feed. Birds were sold at 9 weeks and 6 days of age; average weight was 3.61 lbs.)

GEORGIA

"I switched my entire operation to Unistat in February, 1958. Since making this switch, I have had less trouble with coccidiosis, with resulting better weights and lower feed conversions. The broilers I am marketing show a definite improvement in pigmentation and quality. Medication costs since February have been less than at any comparable period since I have been in business." (This operator feeds out an average of 80,000 broilers a week.)

These grower experiences are why—

No major feed company has ever withdrawn Unistat from its feed

Copyright 1958 by Dr. Salsbury's Laboratories

Printed in U.S.A.

DR. SALSBURY'S

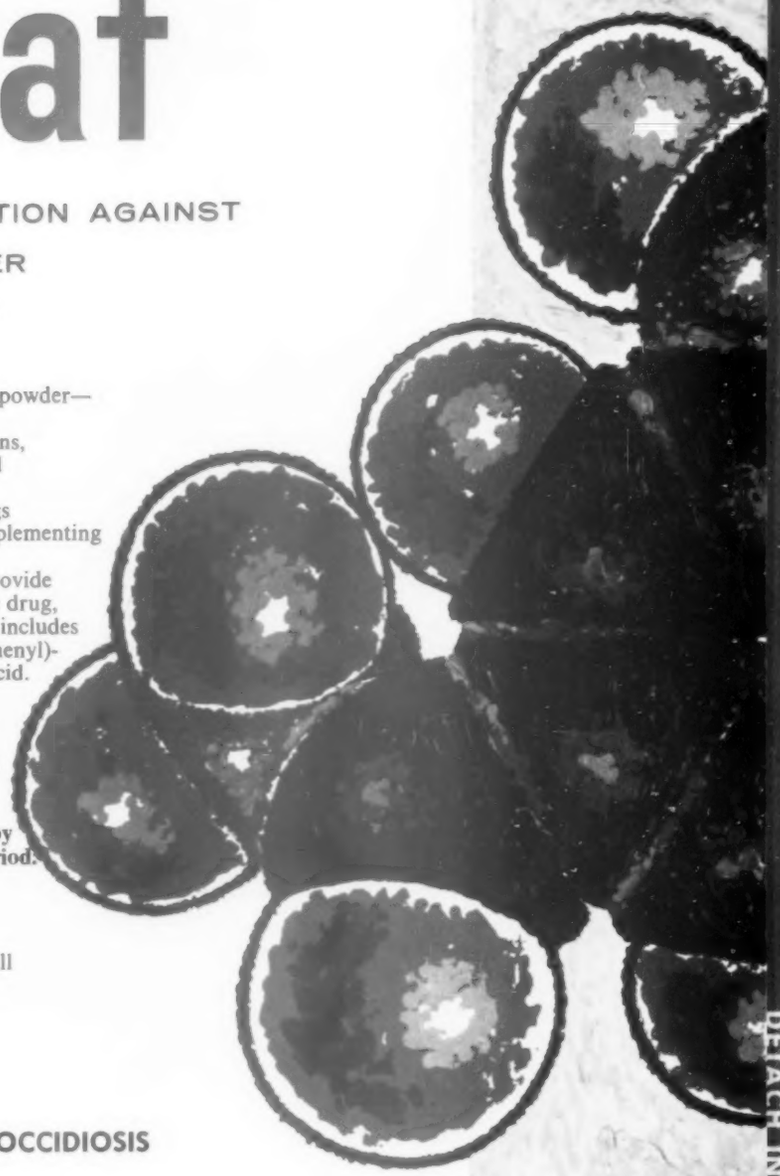
Unistat

PROVIDES SUPERIOR PROTECTION AGAINST COCCIDIOSIS, PLUS OTHER IMPORTANT PROFIT BENEFITS

Unistat is a yellowish, free-flowing powder—a feed additive that blends easily. It is compatible with minerals, vitamins, antibiotics and other normal feed ingredients. Chemically, Unistat is a unique combination of active ingredients—drugs chosen for their specific effect in complementing each other. They work together as a team, so that this new coccidiostat is able to provide far more protection than any single drug, chemical complex or compound. Unistat's formula includes 3,5-Dinitrobenzamide, Acetyl-(paranitrophenyl)-sulfanilamide, and 3-Nitro-4-hydroxyphenylarsonic acid.

Unistat is recommended for coccidiosis prevention, growth stimulation, improved feed efficiency, and better pigmentation in chicks and growing chickens. **Use at the rate of 1 lb. per 1,000 lb. of an all-mash ration. Give Unistat for starting baby chicks and continue through the growing period.**

3,5-Dinitrobenzamide, a relatively new organic compound, along with the other active ingredients of Unistat, makes this product highly effective against all major economic species of coccidia.



- **PREVENTS COCCIDIOSIS**
- **PERMITS IMMUNITY**
- **STIMULATES GROWTH**
- **INCREASES FEED EFFICIENCY**
- **IMPROVES PIGMENTATION**

DETACH, INSERT AND FILE

coccidiosis

A TRIPLE THREAT TO POULTRY PROFITS

Coccidiosis is one of the commonest and costliest of all poultry diseases. It causes annual losses of many millions of dollars. All ages and kinds of flocks are susceptible—baby chicks, pullets, broilers, and layers. Prevention is the best way to protect birds—and profits. Three kinds of coccidiosis cause the most loss. All belong to the genus *Eimeria*. And all are microscopic, single-celled organisms.

1. **E. tenella.** This is the cause of bloody cecal coccidiosis and can kill birds. It occurs mostly in young chicks and is especially deadly after the first two weeks. Birds huddle, their heads drawn in, their feathers ruffled. Bloody droppings are a well-known symptom.

2. **E. necatrix.** This organism causes acute or bloody intestinal coccidiosis. Death losses are frequently quite high. General symptoms are about the same as for cecal coccidiosis (described above) except for ballooned intestines filled with bloody mucus.

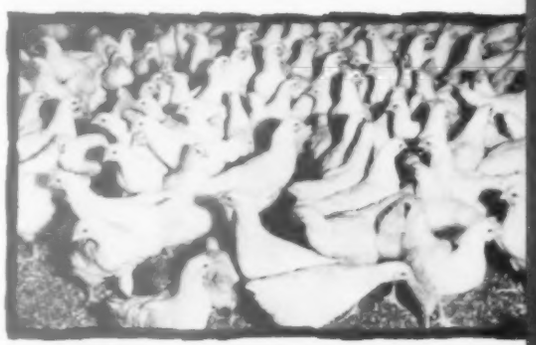
3. **E. acervulina.** This coccidium is the most common. It may cause chronic intestinal coccidiosis or the disease may be acute, causing growing chicks to lose as much as 40% of their body weight in 4 or 5 days. In either case, it is characterized by general unthriftiness among birds. Although mortality is usually low, birds are slow to regain thriftiness. Many of the serious outbreaks during the rainy season of 1958 were caused by **E. acervulina.**

field trials and laboratory tests prove

UNISTAT'S EFFICACY

Unistat was tested under the most rigorous laboratory conditions to determine its efficacy as a coccidiostat and its other effects on birds. The table below shows that Unistat, under experimental conditions, was highly effective in preventing mortality due to the three types of coccidiosis that cause the most economic loss. Unistat substantially maintained normal droppings and test birds enjoyed good comparative weight gains in the presence of massive infection. Complete data on this and other tests are contained in Unistat Feed Manufacturer's Guide, available from Dr. Salsbury's Laboratories (see order form on inside back cover).

Widespread field trials confirmed these test results. Millions of birds have now been fed out on Unistat. Grower experience and records indicate that under varying conditions—weather, infection, feed, etc.—Unistat provides a high degree of protection against the important forms of coccidiosis. You can use it with confidence. It has been proved on more than 100 million birds.



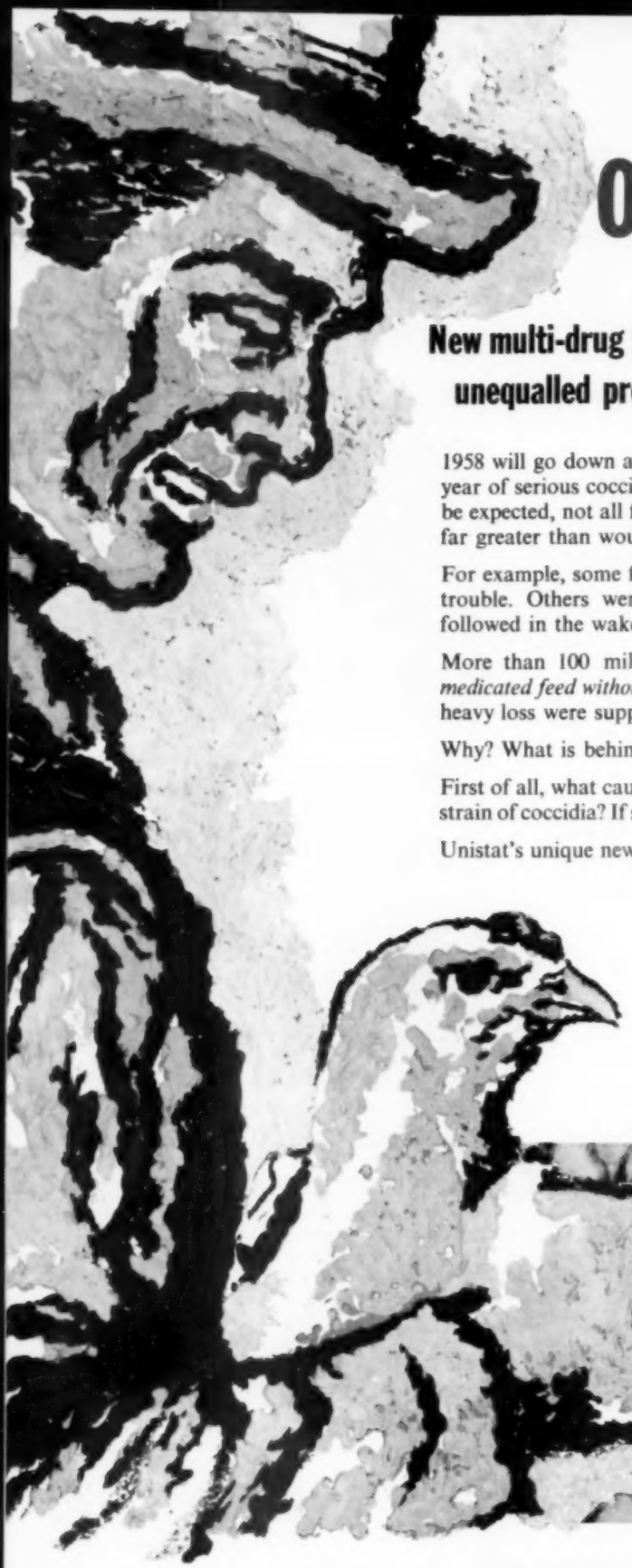
EFFICACY OF UNISTAT (0.1% IN FEED) IN THE PREVENTION OF COCCIDIOSIS DUE TO EIMERIA TENELLA, E. NECATRIX, AND E. ACERVULINA

Species of Coccidia	Number of tests	Number of Chicks Used			Coccidiosis Mortality			Gains as percentage of noninfected control	Comparative Droppings Score (%)
		IM	IC	UC	IM	IC	UC		
E. tenella	10	54	56	56	0	21	0	99.8	68
E. necatrix	11	78	79	79	11	56	0	47	47
E. acervulina	7	39	40	40	0	17	0	86	100

IM: Medicated-Infected; IC: Nonmedicated-Infected; UC: Nonmedicated-Noninfected.

Proved effective against all 3 species under exacting laboratory conditions

DETACH INSERT AND FILE



Only Dr. Salsbury's

New multi-drug formula, fed to over 100 million birds, gave unequalled protection during months of rainy weather

1958 will go down as one of the wettest years in recent history. Also, it was a year of serious coccidiosis outbreaks during the spring and summer. As would be expected, not all flocks were affected similarly. The difference, however, was far greater than would be expected by chance alone.

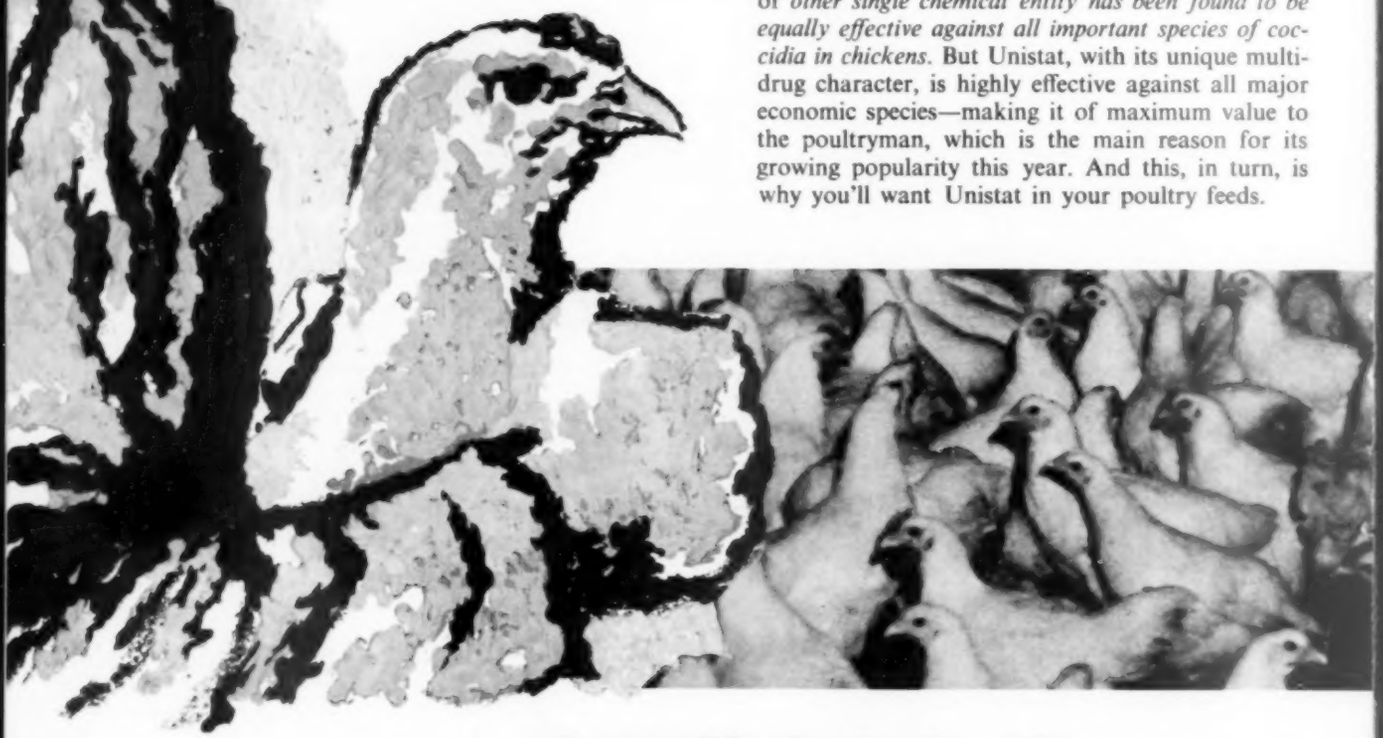
For example, some flocks went through the rainy, humid weather without any trouble. Others were decimated. During the dozens of investigations that followed in the wake of these losses, one fact stood out:

More than 100 million chicks and growing birds were *raised on Unistat-medicated feed without serious outbreaks*, while many of the flocks that suffered heavy loss were supposedly protected by other feed additive coccidiostats.

Why? What is behind these significant differences in efficacy?

First of all, what caused the breaks? Was it weather—and an unusually virulent strain of coccidia? If so, why didn't the Unistat flocks get hurt the same as others?

Unistat's unique new formula is the difference. Unistat contains a combination of active ingredients because *no compound, complex or other single chemical entity has been found to be equally effective against all important species of coccidia in chickens.* But Unistat, with its unique multi-drug character, is highly effective against all major economic species—making it of maximum value to the poultryman, which is the main reason for its growing popularity this year. And this, in turn, is why you'll want Unistat in your poultry feeds.



Let Unistat give your

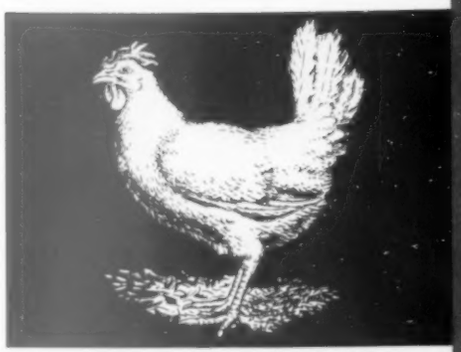
Unistat stood the test so well

Balanced protection permits birds to develop their own immunity

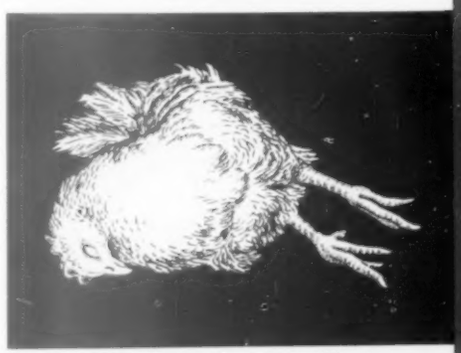
Unfortunately, many coccidiostats protect birds only while the drug is being fed. That is, these drugs prevent the disease so completely that birds cannot develop their own lasting, natural immunity. Thus any gaps in drug administration pose an unnecessary disease loss risk.

All these points are evident in grower demands for a coccidiostat that not only prevents death loss in exposed birds but also permits birds to develop immunity through a controlled, sub-clinical infection. *Unistat meets this exacting requirement precisely.* It lets birds have a mild infection, just as a small-pox vaccination causes a mild form of that disease to humans. In much this same way, Unistat enables birds to acquire specific immunity when exposed to infection while receiving the medication—thus preventing the disease after the medicated feed has been discontinued.

Unistat offers no miracle . . . But it does give growers the economical *balanced* protection they are looking for.



Too much protection—
NO IMMUNITY



Not enough protection—
DEAD BIRD

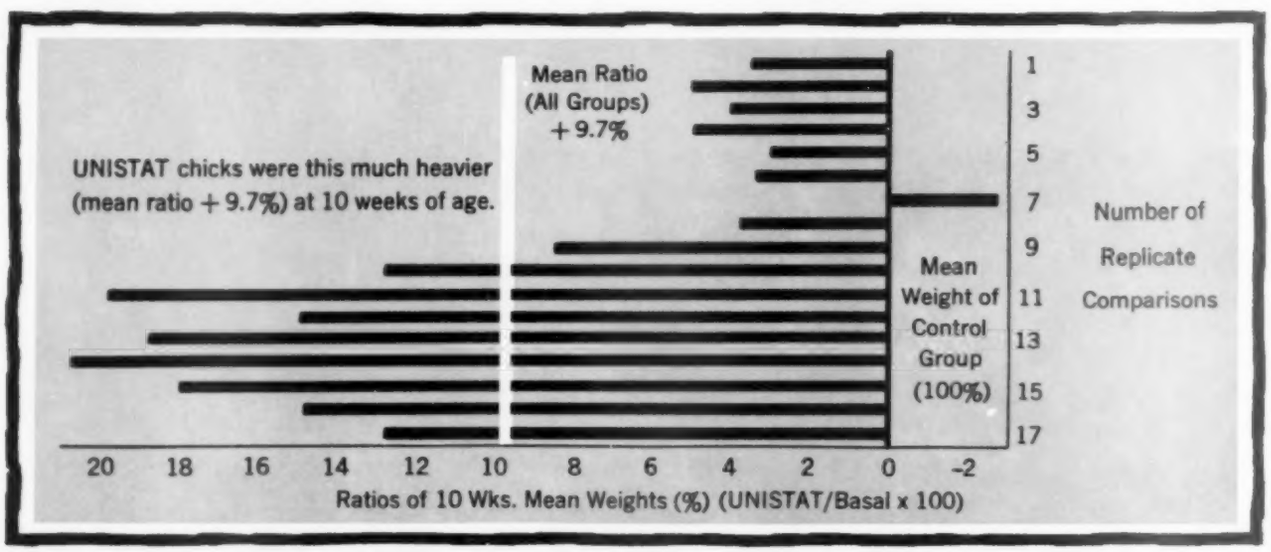
DETACH INSERT AND FILE

feeds this extra protection

FOR TOP PROFITS,

1. grow faster

Fast growth is necessary to highest profits. Extensive tests, conducted by Dr. Salsbury's Laboratories and supported by field trials in commercial flocks all over the country, have shown that Unistat provides this all-important profit benefit. In one series of tests, a total of more than 6,000 broiler-type chicks were fed the basal ration, which contained an antibiotic, and their growth compared to a like number with Unistat in their ration. The bar chart shows the stimulated growth rate of the Unistat chicks—**they were 9.7% heavier at the end of 10 weeks.** Unistat was also fed for 10 weeks to replacement-type chicks confined in brooder houses. At the end of the test period, they were 11.2% heavier than the birds on the basal ration. Field trials, involving many thousands of broiler birds, have confirmed these test results. Your growers can expect a very profitable increase in growth rate from the use of feeds containing Dr. Salsbury's Unistat.

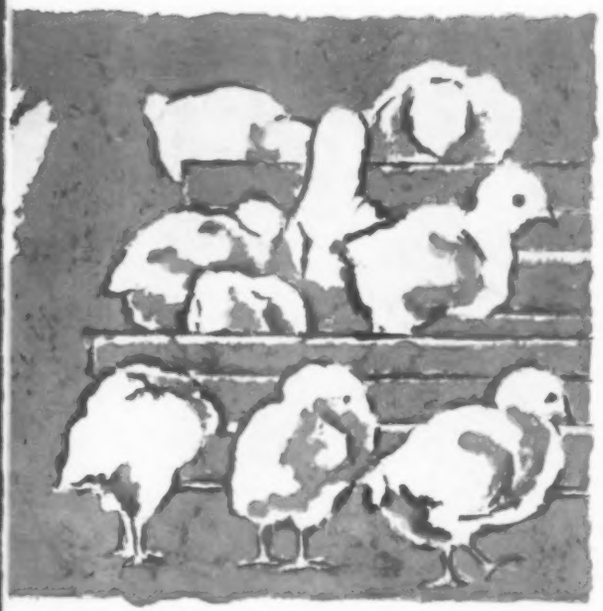


these are only **2** of the many reasons why

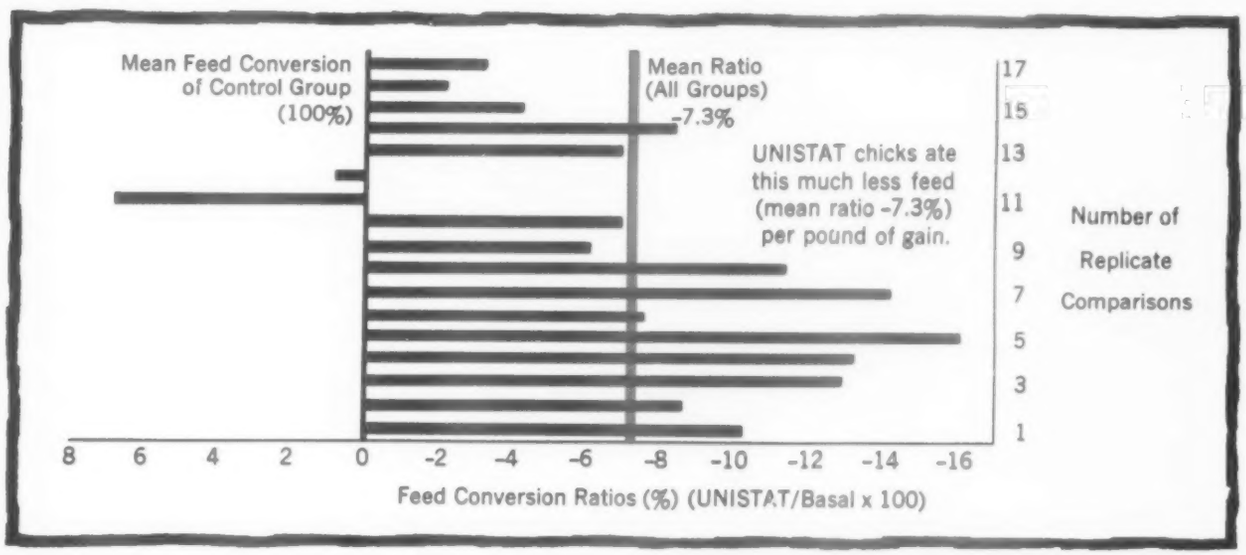
MORE AND MORE GROWERS

UNISTAT-FED BIRDS

2. need less feed

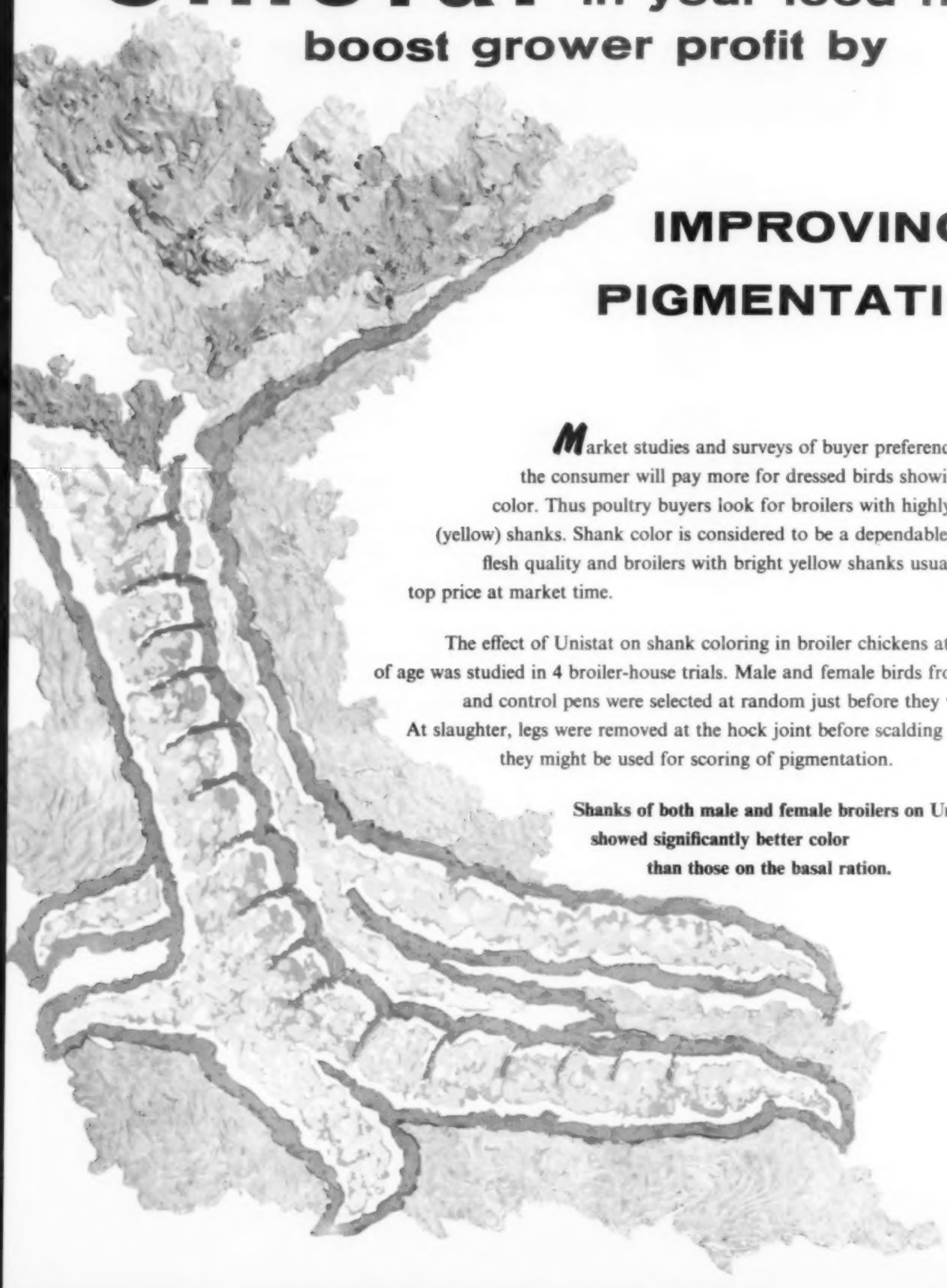


Feed efficiency is even more necessary to profits than fast growth. Birds must somehow make top gains per pound of feed. Here again, exhaustive tests probed into Unistat's side effects, long before it was available on the market. Seventeen pens of broilers were studied at Dr. Salsbury's Research Farm under semi-commercial conditions. Over 13,000 broiler birds were used, with approximately half getting Unistat-medicated feed. The others received a commercial broiler mash (containing an antibiotic) as the basal ration. All birds were sold at 10 weeks. The accompanying bar graph shows the results of this experimental work. **The Unistat broilers needed 7.3% less feed per pound of gain.** Field trials were also conducted in the commercial broiler areas. Nearly 165,000 birds were involved. These, too, showed faster gains and a marked reduction in feed per pound of gain. **These reduced feed requirements, added to all the other benefits of Unistat, can materially increase your growers' profits.**



DEMAND UNISTAT IN THEIR FEEDS

Unistat in your feed helps boost grower profit by



IMPROVING PIGMENTATION

Market studies and surveys of buyer preference indicate that the consumer will pay more for dressed birds showing lots of color. Thus poultry buyers look for broilers with highly pigmented (yellow) shanks. Shank color is considered to be a dependable guide to flesh quality and broilers with bright yellow shanks usually bring top price at market time.

The effect of Unistat on shank coloring in broiler chickens at 10 weeks of age was studied in 4 broiler-house trials. Male and female birds from both treated and control pens were selected at random just before they were sold. At slaughter, legs were removed at the hock joint before scalding so that they might be used for scoring of pigmentation.

Shanks of both male and female broilers on Unistat showed significantly better color than those on the basal ration.

Let Dr. Salsbury help you build better poultry feeds

Because of your desire to provide superior feeds for your customers, you may wish detailed information about this new coccidiostat . . . about this new milestone along the road to profitable poultry production through more effective feed medication. Or, you may wish to talk personally with a Dr. Salsbury technical service adviser and ask him about using Unistat in feeds for starting-growing chickens. Use handy self-mailer order blank below for speedy reply to your request. Regardless of your size or location, we will gladly help you build better poultry feeds. For, in the long run, our future depends on your success!

THESE FREE SERVICES ARE YOURS FOR THE ASKING

AUTHORITATIVE COUNSEL. Available to you is the counsel of more than a score of Dr. Salsbury's scientists in the fields of poultry and animal health, chemistry, microbiology, protozoology, and helminthology, working with the most modern equipment in one of the largest commercial poultry—and animal—health laboratories in the world. These experts are at your service for any advice you may need regarding feed medication.

PATHOLOGICAL SERVICE. Dr. Salsbury's Laboratories offer you the professional diagnostic opinion you may need for providing the proper medicated feeds to cope with unusual flock health problems.

TECHNICAL SERVICE ADVISERS. A group of trained specialists, experienced in feed medication, will come and confer with you. They bring the entire technical resources of Dr. Salsbury's Laboratories to your aid.

SERVICE TRAINING COURSE. Dr. Salsbury's Laboratories have over 25 years' experience in training dealers, field servicemen, and poultrymen in the essentials of poultry health. Short courses in poultry, broiler, and turkey subjects—taught by leading scientists and educators—can help your staff render a better service.

SCIENTIFIC INFORMATION SERVICE. An extensive series of Feed Manufacturers Guides, bulletins, and reports of research covering practically every field of poultry health, will be sent to you regularly.

FIELD SERVICE. One-fourth of Dr. Salsbury's total staff—or about 100 men—are constantly in the field, providing service. These men have an average of 12 years' experience with the Laboratories. They know poultry, and they are always ready to assist you with feed medication.

Please send me the following:

- ☐ Feed Manufacturer's Guide on Unistat ☐ Other Unistat Literature
- ☐ Feed Manufacturer's Guide on: ☐ Polystat® ☐ Histostat®
  ☐ 3-Nitro® Powder ☐ Nitrosal®
  ☐ Wormal and Wazine®
- ☐ Please have your field technical service adviser call on us
- ☐ Send information on Dr. Salsbury's Poultry Short Courses

NAME .....

COMPANY .....

ADDRESS .....

- - - - - - - CLIP OUT—FOLD ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL - - - - - - -

First Class
Permit No. 14
Sec. 34.9 P.L.&R.
Charles City, Ia.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

— POSTAGE WILL BE PAID BY —

Feed Products Division
DR. SALSBURY'S LABORATORIES
Charles City, Iowa

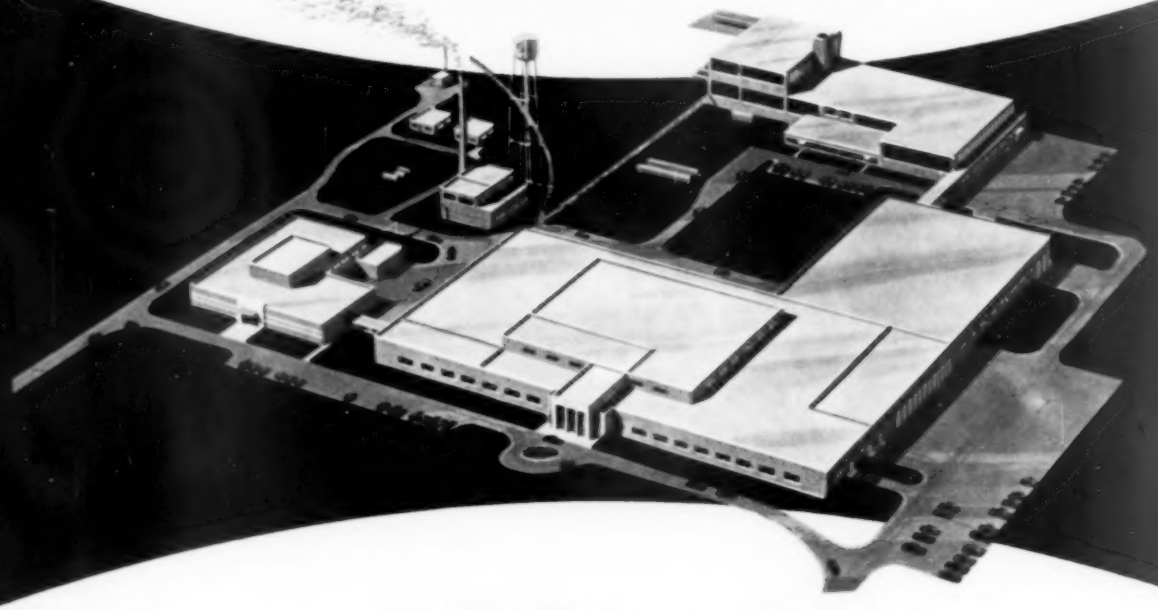
expanding...

TO MEET THE NEEDS OF GROWING INDUSTRY

Both the feed and poultry industries have grown tremendously in recent years. And that growth will undoubtedly continue, as the two industries strive to meet the needs of an ever-increasing population.

We, too, here at Dr. Salsbury's Laboratories, have grown considerably in the near past. Our family of feed additives is getting bigger. Unistat, the newest member, has caused us temporary growing pains. But we don't mind. Growth is a sign of life—and of good health. Unprecedented demands for Unistat—and our 40 other poultry and swine health products—forced us to expand, to build new facilities. We are, in a sense, expanding . . . to meet the needs of growing industry.

Shown below are Dr. Salsbury's production center buildings. Those parts shaded in yellow are now under construction, with completion scheduled for 1959; all others have been built in the last 12 years.



Feed Products Division

DR. SALSBURY'S LABORATORIES

Charles City, Iowa, U. S. A. Phone CApital 8-3241

NATIONWIDE SERVICE TO THE FEED INDUSTRY

Printed in U. S. A.

Form No. 06A19-58

Art Fahrenkrog

NEW BUYER—Art Fahrenkrog has been added to the staff of the Illinois Farm Supply Co., Chicago, as a buyer in the feed division. Mr. Fahrenkrog, who has been with Illinois Farm Supply in various capacities for the past 16 years, will confine his purchasing in the area of grain, mill feeds and animal protein. He replaces Mel Jurgens, who has joined the DeKalb (Ill.) Molasses Co.

Report 'No Advantage' From Grit for Broilers

KNOXVILLE, TENN.—Two University of Tennessee poultry researchers reported that in their studies, there was "no advantage" from feeding insoluble granite grit to broilers.

J. F. Stephens and O. E. Goff said they fed a total of 1,400 birds in a floor trial and a battery trial. In a news release, they summarized the results as follows:

"No significant improvements in either weight gain or feed efficiency were obtained by supplying granite grit to chicks maintained on concrete floors covered with wood shavings similar to conditions found on commercial broiler farms.

"Neither weight gains nor feed efficiency was improved by supplying granite in the aggregate or powdered form to broiler chicks maintained in chick batteries.

"The growth rate was superior for those chicks receiving an all-mash diet — when compared with the growth rate for chicks fed corn and concentrates in separate feeders, either in the presence or absence of granite grit.

"Statistically, our data show that no advantages were obtained from feeding granite grit or powdered granite to broilers."

Abbott 9-Month Report Shows Sales Increase

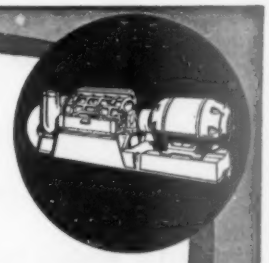
NORTH CHICAGO, ILL.—Abbott Laboratories' world sales for the first nine months of 1958 increased 8.1% and earnings were 5% over the like period of 1957, it was announced by George R. Cain, president and general manager of the North Chicago firm.

Consolidated domestic and foreign sales for the nine months were $90,799,000, compared to $83,978,000 for the like period of 1957. Net earnings were $10,225,000, compared to $9,739,000 in 1957. These earnings were equivalent to $2.65 per common share as compared to $2.53 in 1957 when slightly fewer shares were outstanding.

However, comparisons for the third quarter were not as favorable as for the first six months, Mr. Cain pointed out. Although sales in the third quarter were $34,128,000, an increase of 4.9%, earnings were down $118,000 to $4,511,000, a decrease of 2.5%.

"Both domestic and foreign operations showed sales increases in the nine months," Mr. Cain said. "However, the earnings increases were made in our domestic operations."

HAMMERMILLS, FEEDERS, MIXERS, MAGNETIC SEPARATORS, ETC.



Jacobson MACHINE WORKS

Serving the feed industry for 47 continuous years. Ask your Jacobson representative.

1090 TENTH AVE. S.E. Dept. M
MINNEAPOLIS 14, MINN.

Always in demand for its quality

SPENCER KELLOGG'S OLD PROCESS LINSEED OIL MEAL

Year after year the demand for Kellogg's famous Old Process Linseed Oil Meal continues. Livestock feeders know from experience that it pays them to use this extra effective conditioner.

SPENCER KELLOGG MEAL SALES OFFICES ARE LOCATED AT:

Bellevue 2-8201	Des Moines CH 4-7291
Buffalo CL 5850	Long Beach HE 2-4954
Chicago FR 2-3437	Minneapolis FE 5-6231
Decatur 5365	Philadelphia PE 5-8787

KELLOGG'S THE TEST TELLS 1894

SPENCER KELLOGG AND SONS, INC.
BUFFALO 5, N. Y.

Spencer Kellogg Mills are located at: EDGEWATER, N. J. • BELLEVUE, OHIO • CHICAGO, ILL. • DECATUR, ILL. MINNEAPOLIS, MINN. • DES MOINES, IOWA • EL CENTRO, CALIF. • LONG BEACH, CALIF.

Complete facilities for both truck and rail shipments

DEVOLD
Serving Mills & Breeders For Over 30 Years

Devolkod ® Vitamin Oils (Fortified Cod Liver Oils)
Devolkod ® Non-Dest. Cod Liver Oil U.S.P.
Devold Vitamin A & D Feeding Oils
Devold Vitamin A Oils
Peder Devold Wheat Germ Oil

"Stabilized" From Can to Carloads
ORegon 9-8400

PEDER DEVOLD OIL CO.
DIV. CLINTBROOK CHEMICAL CO., INC.
417-FM Fifth Avenue
New York 16, N.Y.
Plant: Lyndhurst, N. J.

Methods of Adding Fat to Poultry Rations

I. Methods Used to Heat Animal Fat in Drums

II. Mixing Fat into Feed with a Vertical Mixer

By Paul E. Waibel, Vernon M. Meyer and Elton L. Johnson
University of Minnesota

EDITOR'S NOTE: This is one of the first published reports on research on methods of heating and adding fat to poultry rations. The work was conducted at the University of Minnesota, St. Paul, by Dr. Paul E. Waibel, associate professor of poultry husbandry; Vernon M. Meyer, research associate in agricultural engineering, and Dr. Elton L. Johnson, professor and head of the poultry husbandry department. A more detailed report on the research may be found in Minn. Agr. Exp. Sta. Misc. Rept. 31 (1958). The research reported here was supported in part by funds from the Minnesota Rural Electrification Research Council. The authors also expressed appreciation to Ralph Van Hoven, Van Hoven Co., St. Paul, for material assistance and advice.

Emphasis on increased energy levels in animal feeds has stimulated the addition of fat to many types of feed. Since there is little published information regarding the heating and mixing of animal fats into feeds, experiments were initiated to develop techniques and information of value in the practical incorporation of fat in poultry feeds.

In the comparison of heating units employed to heat 55-gal. drums of tallow, three methods were utilized: (1) Immersion heater (4000 w.), (2) wrap-around belts (3000 w.) with added insulation, and (3) metal drum heater (3200 w.) with built-in insulation. The immersion heater was very efficient but offered the problem of inserting it into a drum of cold fat. The peripheral heating units circumvented this difficulty, but allowed a cone of unmelted fat to stand in the middle of the drum for considerable time in spite of high temperatures of the surrounding melted fat. In efficiency, the immersion heater and wrap-around belts were similar, but the drum heater was less efficient due to air leaks.

Incorporating of fat into feed using a vertical screw-type mixer was easily accomplished during summer conditions, but during winter tests special mixing modifications were required to insure a mix relatively free of fat-balls. These included raising the fat to 180° F. and omitting ground corn until after the fat was blended into the remainder of the formula.

I. Methods Used to Heat Animal Fat in 55-Gallon Drums

DESCRIPTION OF EQUIPMENT

The heating equipment used is described in Appendix A and pictured in Figure 1.

The temperatures were measured with a 16-point temperature recorder, utilizing copper-constantan thermocouples. Five thermocouple junctions were inserted in each drum of fat. They were mounted on a wooden stick at 8-inch intervals, extending diagonally from top to the bottom of the drum. The 16th junction was used to record the air temperatures in the feed room. The electrical energy consumption of the heaters was measured with watt-hour meters.

PROCEDURE FOR TEST

To be sure of continuous heating, the thermostats were turned to their maximum temperatures. Preliminary tests provided a basis for prediction of approximate average temperatures by noting the temperatures on the recorder. Unit I was used with and without insulation while Units M and W were always used with insulation. Tests were conducted both in summer and winter to provide a wide temperature range.

An attempt was usually made to obtain a final temperature of approximately 180° to 200° F. with each unit. When the thermocouple reading indicated this range, the hot fat was stirred with a rod placed in one of the bung holes and the final temperature was recorded. With Unit I this required a short mixing period since the temperature variation throughout the drum was only about 10 degrees. Considerably more mixing was required in the drums heated by the two wrap-around units.

CHARACTERISTICS OF THE HEATING UNITS

Unit I—Immersion Heater. This unit heats the fat directly since the heating element is completely surrounded by fat. The heated fat rises to the top and a circulation results which mixes the fat well. When the fat is melted, the temperature throughout the drum is fairly uniform.

This type of unit is simple to use, portable and a very efficient method of heating fat. Inserting this unit into cold fat through the two-inch bung hole proved time consuming in winter. However, this difficulty could be minimized by using an open top drum since the entire heating element is placed in simultaneous contact with the fat. In summer, insertion of the heating element through the bung openings was relatively easy. In tests reported in Table 1, the unit was already immersed in the fat prior to heating.

Unit W—Wrap-Around Belt. This unit applies heat at the lower two thirds of the outside of the drum. The heat enters the drum by conduction through the side wall. This unit was always used with an insulating blanket to conserve heat.

Temperatures over 230° F. were recorded at the two top thermocouples, while solid fat at the initial temperature remained at the bottom of the drum. If only a portion of the drum contents were to be used, this would present no problem. If the total contents (400 lb.) were to be used, the fat would need to be mixed for some time to melt the cone at the bottom of the drum.

This unit is simple to operate, easily portable, and quife efficient (when proper insulation is used). The unit had no thermostatic control and so could not be used to preheat and hold the fat at a raised temperature.

Unit M—Metal Case Unit. This unit is similar in operation to Unit W in that the heat is again applied at the periphery of the drum. The heat is transferred from the heating elements through an air space by radiation and convection to the side wall. The heating progress again results in a cone as with Unit W.

This unit is also portable, simple to operate and has thermostatic control. However, it requires more electrical energy to operate. A better method of sealing the heating air space would improve its efficiency, since the unit did have a number of air leaks. In our tests, an attempt was made to fill the spaces with asbestos cloth.

HEATING TESTS COMPARISON

Typical results of summer and winter tests are shown in Table 1. "Watt-hours per °F." were obtained by dividing the energy consumption in kilowatt-hours by the temperature rise in degrees Fahrenheit. The winter tests showed a slightly increased electric energy requirement. This was the result of lower initial fat temperature and lower ambient air temperature.

SUMMARY OF HEATING TESTS

1. Three electric heating units were tested.
   a. Unit I, immersion heater, 4000 watts, thermostat.
   b. Unit W, wrap-around belts with special insulation, 3000 watts, no thermostat.
   c. Unit M, metal drum with built-in insulation, 3200 watts, thermostat.
2. The electric energy consumption for each heating unit ran as follows:
   a. Unit I, 78-97 watt-hours per °F. per 400 lb. fat.
   b. Unit W, 84-98 watt-hours per °F. per 400 lb. fat.
   c. Unit M, 114-131 watt-hours per °F. per 400 lb. fat.
3. The number of degrees of temperature rise per hour for 400 lb. fat ranged:
   a. Unit I, 36°-48° F.
   b. Unit W, 29°-36°F.
   c. Unit M, 25°-27°F.
4. Unit I melted all the fat in a relatively short time and tended to mix the hot fat well. Unit I was difficult to insert in cold weather tests.
5. Unit W was simple and efficient to use but left an unmelted cone during cold weather tests which required considerable mixing to melt.
6. Unit M was easy to use, but also left an unmelted cone. The operating cost was highest, apparently due to an imperfect seal around the drum which permitted air loss from the heated air space. Attempts were made to minimize these air leaks as might be done in actual practice.
7. Insulation around the drum is worthwhile in cold weather heating, especially if the fat is kept hot for any length of time.

TABLE 1. Study of Efficiency of Equipment Used to Heat Animal Fat* in 55 Gallon Drums

Test No.	Ave. room temp. °F	Fat temperature initial/final (°F) I	W	M	Duration of test hours I	W	M	Energy consumption Kwhrs. I	W	M	Watt hour† per °F I	W	M
Summer													
2	78	77/179	79/185	77/174	2.33	3.00	3.50	8.96	9.00	12.50‡	87.8	84.8	129.0‡
3	68	70/199	70/199	70/204	3.17	3.67	4.83	11.68	11.01	15.42	90.4	85.3	116.0
Winter													
6	45	27/196	41/196	39/198	4.55	5.12	6.50	15.58	14.48	21.20	97.8	93.3	133.3
8	28	22/187	22/203	22/190	3.75	6.25	6.83	13.61¶	18.03	22.16	82.6¶	99.7	131.7

*Three identical 55 gal. drums with two bung hole openings, each containing 400 lb. of stabilized bleachable fancy tallow (titer 41° C).
†Since the temperature rise for each drum was not the same this is a better comparison and is for 400 lb. of fat.
‡In this test a watt hour meter which could be read only to the nearest 10 kwhr. was used.
¶Building insulation (4" aluminum wrapped fiberglass, 16" width) wrapped around drum in this test.

FIGURE 1. The three heating units used in the tests. Left to right, Unit M, Unit I and Unit W.

II. Mixing Animal Fat into Feed with a Vertical Screw Type Mixer

The object of the feed mixing tests was to study procedure variations affecting the texture of the resulting feed mixture. The incorporation of fat into feeds in cold weather has been somewhat of a problem where vertical mixers are employed, because the fat and feed have a tendency to aggregate and form "fat-balls."

The presence of such lumps in the feed is undesirable. On first thought, it might be felt that the fat balls represent primarily fat. If this were the case, birds preferring to eat the fat balls might be receiving a badly unbalanced diet. To check this point, the composition of fat balls in one ration was determined.

Feed containing 23.9% protein and 6.2% fat had fat balls containing 17.5% protein and 19.7% fat. Thus there was approximately a three-fold increase in the presence of fat, with a corresponding decrease in the protein content.

It is not believed that chicks receiving a fairly small amount of these lumps would be affected adversely. Regardless, it is best to produce feed which is essentially free of fatty lumps.

Prior to conducting the tests, it was necessary to assemble a mechanical unit capable of pumping and measuring the heated fat into the

TABLE 2. Rations Used in Mixing Tests*

Ingredient	Ration—Lbs. per ton A	B
Ground yellow corn	560	1,000
Animal fat,† stabilized	100	100
Ground oats	100	...
Soybean oil meal, solvent	550	640
Meat and bone meal	100	100
Fish meal	240	...
Fish solubles, 100% equivalent, dried on soybean oil meal	...	40
Alfalfa meal	150	50
Dried whole whey	60	30
Steamed bone meal	60	20
Oyster shell, chick size	40	10
Salt, iodized	30	10
Manganese sulfate, 70%	1.5	0.5
Vitamin A (5000 I.U./gm.)	4.5	1.0
Vitamin D (3000 I.C.U./gm.)	2.3	0.3
Vitamin mixture‡	3.0	1.0
Vitamin B_{12} (6 mg./lb.)	2.0	1.0
Choline chloride (25%)	...	1.0
Procaine penicillin (4 gm./lb.)	3.0	1.0

*One ton mixed in 3,000 lb. capacity feed mixer. Ration A is chicken breeder supplement. Ration B is chick starting mash.
†Bleachable fancy tallow, titer 41° C.
‡Vitamin mixture containing the following per pound: riboflavin 2 gm., calcium pantothenate 4 gm., niacin 9 gm., and choline chloride 10 gm.

feed. The details of this unit may be observed in Figure 2.

Iron braces were constructed and attached to the corner posts of the feed mixer. On these were attached two pieces of wood measuring 2" x 8" in dimension. The order of equipment from fat to feed follows: Barrel insert pipe, suction hose, universal coupling, gate valve, pump, flow meter, gate valve, universal coupling, discharge hose. The details of the equipment may be found in Appendix B.

The pumping unit was never drained of fat. Heating cable was applied to heat the fat in the system prior to starting the pump. It required about 90 minutes in the coldest weather to satisfactorily heat the fat in the system. Considerably less time was required in moderate weather.

When starting the pump, both gate valves were closed. Thus the pump's relief valve cycled the fat within the system. Then the valve on the suction side was opened. Last, rate of flow of the fat into the feed was controlled at the discharge gate valve.

Each gallon of liquid fat contains approximately 7.3 lb., although this figure will vary with temperature and source of fat. It is recommended that each feed manufacturer establish a temperature-quantity chart, derived under his conditions.

The rations employed in this study included a chicken breeder supplement (Ration A) and a chick starting mash (Ration B). These are shown in Table 2. Other experimental variables are listed with the results in Table 3.

TABLE 3. Influence of Room and Added Fat Temperatures on the Success of Adding Animal Fat to Feeds*

Test	Ration	Corn	Fat temp. °F.	Flow gal./min.	Mode	Feed retained—sieve sort— 0.25" gm.	0.185" gm.	0.157" gm.	Total gm.	%	Condition of feed
1. Date Sept. 19, 1957	A	in	105	3	hopper	30	46	32	108	0.86	Unacceptable
Room temp. 63° F.	A	in	115	3	hopper	18	26	18	62	0.49	Fair
Feed temp. 68° F.	A	in	125	3	hopper	6	16	13	29	0.23	Very good
Outside temp. 52° F.	A	in	135	3	hopper	0	2	3	5	0.04	Excellent
2. Date Jan. 3, 1958	A	in	140	3	hopper	41	88	46	175	1.38	Unacceptable
Room temp. 26° F.	A	in	160	3	hopper	52	90	69	211	1.67	Unacceptable
Feed temp. 25° F.	A	in	180	3	hopper	47	87	55	189	1.50	Unacceptable
Outside temp. —2° F.	A	in	200	3	hopper	36	75	52	163	1.29	Unacceptable
3. Date Jan. 24, 1958	B	in	180	3	pipe	10	32	40	82	0.65	Fair
Room temp. 44° F.	B	in	180	5	pipe	8	25	30	63	0.50	Fair
Feed temp. 44° F.	B	in	180	1	pipe	16	39	41	96	0.76	Fair
Outside temp. 23° F.	B	last	220	3	pipe	1	3	6	10	0.08	Excellent
4. Date Feb. 12, 1958	B	last	160	3	pipe	6	20	20	46	0.36	Good
Room temp. 26° F.	B	last	180	3	pipe	2	13	20	35	0.28	Very good
Feed temp. 25° F.	B	last	200	3	pipe	2	12	22	36	0.29	Very good
Outside temp. 10° F.	B	last	180	3	feed	3	12	25	40	0.32	Very good
5. Date Feb. 19, 1958	B	in	180	3	pipe	36	87	70	193	1.53	Unacceptable
Room temp. 24° F.	B	in-fine	180	3	pipe	40	100	85	225	1.78	Unacceptable
Feed temp. 24° F.	B	last	180	3	pipe	8	20	24	52	0.41	Good
Outside temp. 0° F.	B	last	230	3	pipe	2	5	12	19	0.15	Excellent

*Feed mixer: Brower 3,000 lb. capacity vertical with floor hopper.

†Rations shown in Table 2. CORN "in" means that entire ration was mixed prior to addition of fat. CORN "last" indicates corn added after animal fat. MODE hopper refers to addition of fat directly to cycling feed in hopper; MODE pipe refers to fat addition to pipe welded on to side of cylinder. See illustration.

RESULTS OF MIXING TESTS

The rations were mixed in an unheated room using a vertical screw-type mixer. Pertinent temperatures are given with each test (Table 3).

The addition of fat to Ration A during moderate weather was performed very satisfactorily (Table 3, Test 1). Good dispersion was obtained by heating the fat to about 125° F. Higher fat temperatures also produced good results during moderate weather.

Similar experimental conditions were utilized during the winter months, excepting that higher fat temperatures were employed. Results of Test 2 indicate that a high percentage of "fat-balls" was present even when fat temperatures up to 200° F. were employed. Under these conditions, the feed texture was judged unacceptable.

Adding the fat directly into the feed as it cycled through the hopper of the mixer was considered a possible factor responsible for the lack of success in the cold weather test. Therefore, a ¾" pipe was welded to the cylinder of the feed mixer, as shown in the illustration, so that fat would be added directly to the feed as it was moved upward in the mixer by the turning screw.

In spite of the change to the welded pipe, there was still a considerable number of fat-balls in the feed. Therefore, in the final batch of feed in Test 3, a modification was introduced whereby corn was omitted from the formula until after the fat had been added. In this case the fat blended smoothly into the feed. It should be noted that the fat temperature in this latter mix was also raised to 220°F.

In Test 4 the corn was again added last and the fat temperature was varied from 160° to 200°F. The results were generally good. In the final group in Test 4, fat was again added into the hopper and satisfactory results were obtained.

In view of the improved mixing results by adding corn last in the mixing process, it seemed possible that larger particle sizes in the corn meal might be contributing to the fat-ball problem by forming a "nucleus" for the fat-ball to form around. Therefore, a special preparation of corn meal was secured wherein the corn meal was ground very fine.*

Thus in Test 5, the corn was again added to the ration prior to the addition of fat (first two groups). However, regardless of the texture of the corn, results were again unacceptable. As a further check on the earlier results wherein corn was added last and fat was added through the pipe on the side of the mixer, two more batches of feed were mixed. At 180°F. good results were obtained, and at the higher temperature of 230°F. the results were again excellent.

A SATISFACTORY METHOD

Incorporation of fat into feed required special procedures in a cold room when a vertical mixer was used. The most useful adjustment was to leave the corn out of the mixer until after the fat was incorporated. Soybean oil meal is a good ingredient to which to add the fat, since it is quite granular. The mixing modification where 50% of corn meal was added last worked satisfactorily; however, 5% of added fat would be about the maximum that could be utilized successfully in this manner.

If levels of added fat greater than 5% were desired during cold weather, one possibility would be to employ a feed mixer using continuous mixing and agitation. Another possibility involves adding the hot fat directly to pellets or crumbles.

Experience indicates that a nicely textured feed may be produced by adding 12% of fat to crumbles. Feed containing 12% of added fat on crumbles is easier to handle and flows more readily than if the fat is added directly to the mash. A further suggestion to add higher amounts of fat in cold weather is to employ the use of a molassofier (high speed beater-type mixer) in conjunction with the vertical mixer.

SUMMARY OF MIXING TESTS

In summer tests it was necessary to heat animal fat to 125°F. to produce a good resulting mixture of feed.

In winter tests in an unheated room, it was impossible to produce a good feed mixture relatively free of fat-balls when the entire mash was mixed prior to the addition of fat, regardless of the fat temperature employed up to 200°F. However, the simple expedient of omitting the corn meal from the ration until after the fat was added resulted in a minimum of fat-ball formation when the temperature of the added fat was 180°F. or higher.

Modifying the mixing procedures so that corn meal was added after fat was incorporated seemed to afford a method of by-passing the usual "fat-ball" problem common in cold conditions.

Appendix A

ELECTRIC HEATING UNITS

Metal drum (Unit M)

Palmer Automatic Drum Warmer, 230 volts, 3 phase, 3200 watt, 100° F. to 450°F. heavy duty industrial type thermostat, 2" sheet fiberglass insulation. (Harold L. Palmer Co., Detroit 6, Mich.)

Wrap-around belts (Unit W)

Pre-Fab Snap-On Heater, PFD-230, 230 volt, single phase. Each belt 1500 watt. (Pre-Fab Heater Com-

*All corn was ground through a hammermill operating at 3,680 r.p.m. Regular ground corn was produced with ⅜" screen. Fine ground corn was produced with ¼" screen.

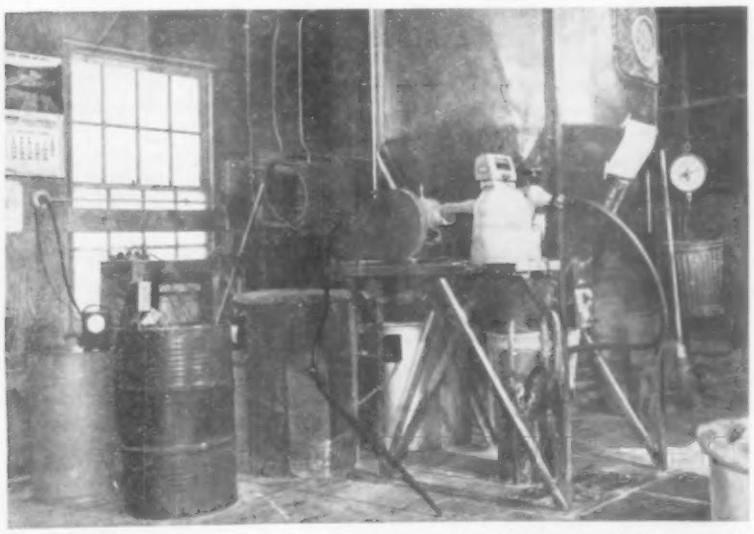
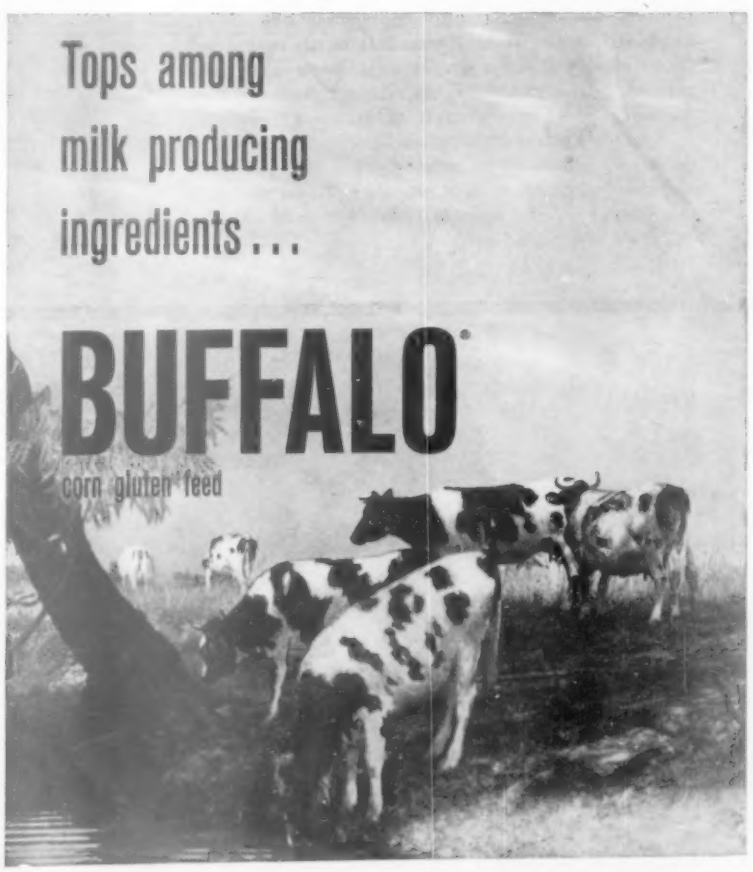


FIGURE 2. Feed room where experiments were conducted, showing all of the equipment used in the tests.



A standard in the Feed industry for more than 50 years, BUFFALO Corn Gluten Feed is preferred by dairymen because it has proven one of the best milk producing ingredients. Make your mix a fully balanced ration for top milk production—use BUFFALO Corn Gluten Feed.

CORN PRODUCTS SALES COMPANY • 17 Battery Place • New York 4, N. Y.

NEW OFFICE—The Ohio Grain Co., Mechanicsburg, Ohio, has added this 28-ft. by 44-ft. Armco steel building to its outlay. John E. Wiant is manager of the firm.

pany, Inc., Guilford, Connecticut)

Immersion (Unit I)

Electro-Thermo Automatic Drum Heater. 230 volt, single phase, 4000 watt, 50°F.-250°F. temperature range thermostat with pilot light. (Electro-Therm, Inc., Silver Spring, Md.)

INSULATING BLANKET (39"x84"), 1" fiberglass insulation (1½ lb./ft. density) covered with ⅛" asbestos cloth on one side, canvas on the other side. Cover (32" diameter) of same material. (MacArthur Co., St. Paul 14, Minn.)

Appendix B

Pump—Viking Pump G 153 all-iron, with relief valve. ½ H.P. totally enclosed motor, 1725 RPM, 115 V., 1 phase, 60 cycle, 5 G.P.M. (Viking Pump Co., Cedar Falls, Iowa).

Meter—Bowser Industrial Xacto Meter (Bowser, Inc., Ft. Wayne, Ind.) Model 460—15-1 L, 3-15 GPM Capacity—all iron, stainless and carbon construction—¼ of 1% accuracy.

Gate Valves—Two all-iron saddle valves (gate valve with wheel handle). Equiv. Walworth 711.

Piping—¾" standard black iron piping.

Hose—¾" R-32 Neoprene tube and cover hose for suction. Woven cotton and wire filler, reinforced (Goodall Rubber Co. of Minn., St. Paul, Minn.) Length of suction hose 3½ ft. Length of discharge hose 6½ ft.

Couplings—2¾" Universal All Iron Quick Couplings, with neoprene bushings (Dixon Valve and Coupling Co., Philadelphia 22, Pa.)

Heating Cable—80 ft. TWS-18 Silicone Thermwire, 120 v., 400 w. (Wiegand & Co., Pittsburgh, Pa.)

Insulation and Wrapping—Insulation ⅞"x3"x25' (per roll) fiberglass insulation. Special wrapping included. (Wrap-On Co., Chicago, Ill.)

Feed Mixer—Vertical auger type, 3000 lb. capacity, below floor model. (Brower Mfg. Co., Quincy, Ill.)

"Raise Turkeys or Get Out," Association Told

ESSEX JUNCTION, VT.—Turkey growers are faced with the option of "either going out of business or raising turkeys," said Wallie Warren, Wirthmore Feeds Inc., Waltham, Mass., at the annual meeting of the Vermont Turkey Growers Assn., here.

Mr. Warren said that the grower who stays in the business must put even greater emphasis on producing a higher quality bird. He said such birds must be uniformly processed, eviscerated and put in an airtight plastic container.

"It is further up to the grower to supply the receiver with birds that are of high quality and uniform in quality, that is, a standardized product," said Mr. Warren.

In other business, Craig White of the Crow's Nest Farm, Bradford, Vt., was elected president of the association.

Other officers elected were: Donald J. Ramp, Brandon, first vice president; Robert J. Bushey, Swanton, second vice president; and Mrs. Edith Turner, Burlington, secretary-treasurer.

Elected directors-at-large were A. R. Speir, Montpelier; Allen Pierce, St. Albans; and Donald C. Henderson, University of Vermont.

Sponsors Trip

MARSHALLTOWN, IOWA—S & O Products Co., Marshalltown, distributor of livestock minerals, sponsored an excursion of Marshall County, Iowa, beef producers to Harding County, South Dakota, recently. A group of 28 persons made the five-day tour to purchase breeder cattle. The S & O Products Co. provided transportation. The company reported that the cattlemen's association at Buffalo, S.D., plans a similar tour to the Iowa county next spring.

NEW ELEVATOR OPENS

BURCHINAL, IOWA—The Burchinal Cooperative Society Elevator is now in operation after four months of construction. Some features of the new plant are a new weigh buggy, a 100-h.p. grinder and a three-ton mixer. A 24-ft. addition was also made to the warehouse.

DESIGNED AND BUILT SPECIALLY FOR GRAIN ELEVATORS

TRIUMPH CORN SHELLERS

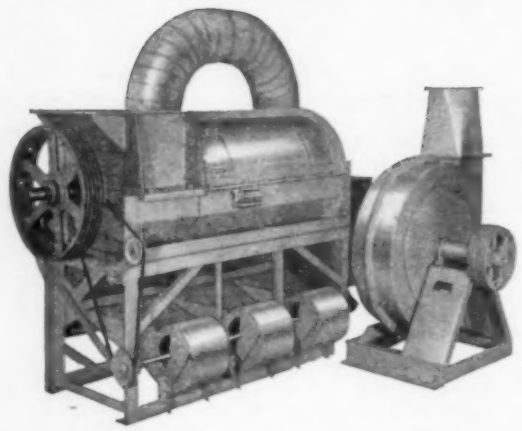
shell, separate and clean the corn; remove cobs, husks and dirt

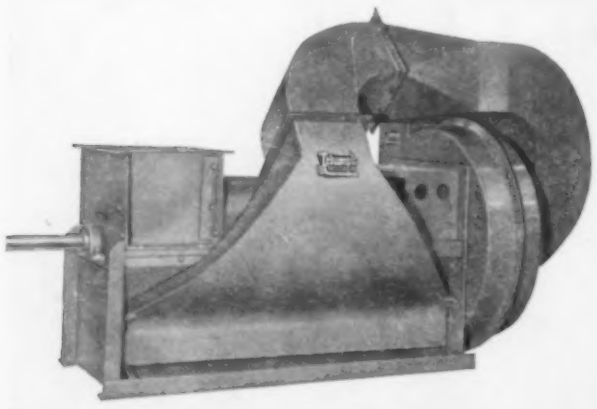
assure fast, efficient, dependable, low cost operation

Improved TRIUMPH No. 1200* Corn Sheller

Complete system including sheller, cleaner and blower. The original and undisputed best. New, improved model assures even less costly operation; better cleaning; easier access to all parts; and more automatic operation. Highly efficient even on high moisture corn, or corn full of husks. Exceedingly compact. Requires little space. Easily adapted to any plant arrangement. Few moving parts. Fully patented. Capacity 40 to 50 tons of machine picked ear corn per hour. Send the coupon today for complete description and specifications!

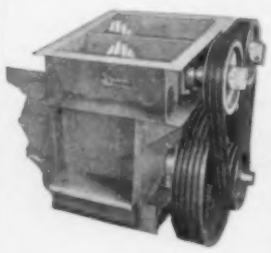
*U. S. Patent No. 2,754,827.





New TRIUMPH No. 900* Corn Sheller

All the patented, proven features of the larger No. 1200 system, but somewhat smaller. Rugged, sturdily built. Fully meets all requirements of grain elevator service. Highly efficient on high moisture corn or corn full of husks. Low intake height. Sheller, cleaner and blower driven with a single motor simplifying installation and operation. Screen, shelling plates and all other internal parts readily accessible. Capacity 30 to 40 tons of machine picked earn corn per hour. Send the coupon today! Get full details and dimensions.



TRIUMPH Double Roll Ear Corn Crushers

Only 10" high. Mounts easily on feed hopper of either a No. 1200 or No. 900 Sheller. Prevents entrance of rocks, tramp iron or other foreign materials. Large capacity. Highly efficient. Double shaft design permits one shaft to operate even though pins in other sheave are sheared. Easily installed. Driven from the sheller. Requires no additional motor. It'll save you time and money! Get full details. Send the coupon today.

THE C. O. BARTLETT & SNOW CO.
6249 Harvard Avenue
Cleveland 5, Ohio

Send full details about:—

☐ No. 1200 Sheller ☐ No. 900 Sheller ☐ Ear Corn Crushers

☐ Have an engineer survey my plant. (No cost or obligation to me)

Name_____ Title_____

Company_____

Address_____ State_____

SPECIFY Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave.
ST. LOUIS 1, MO.

VITAMINS PRECISION BUILT FOR PRECISION NEEDS
VITINC VITAMINS, INC.

BASIC MATERIAL MANUFACTURERS and HEADQUARTERS FOR TECHNICAL INFORMATION
Write or Wire Your Requirements
VITAMINS, INC.
809 W. 58th Street, Chicago 21, Ill.

For Better Pellets...

THE SWITCH IS TO PACO

Here's the success story of the feed business . . . what dealers and customers* are saying after they've switched to pellets made from Paco!

"They form better . . . with the glossy and slick look I want."

"Moisture doesn't affect my Paco pellets."

"Fines are down 38%!"

"Customers tell me Paco pellets taste better."

"And smell? Man, they smell good!"

"Production is up a healthy 6%."

"Nobody told me it was the only binder on the market that was nutritious, too . . . but it sure is."

Thcse are the facts! Unsolicited testimonials are proving that Paco means better pellets for your customers . . . regardless of other ingredients in the formula! Stock and sell Paco for bigger profits from pellets!

**names sent on request*

GET PACO!

Packed in the Fast-Selling 50-Lb. Bag

PUBLICKER INDUSTRIES INC.
Animal Feed Sales Dept., 1429 Walnut St., Philadelphia 2, Pa.

Without obligation send the following folders for distribution to customers:

- ☐ POULTRY FEEDS with PACO
- ☐ SWINE FEEDS with PACO
- ☐ DAIRY and BEEF CATTLE FEEDS with PACO
- ☐ CUSTOM MIX DAIRY FEEDS with PACO
- ☐ FARM USES OF PACO

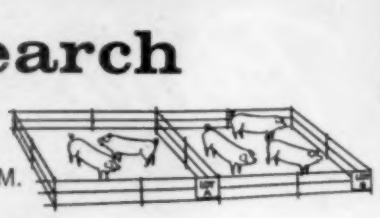
CLIP THIS COUPON TO YOUR LETTERHEAD

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF
PUBLICKER INDUSTRIES INC.
1429 WALNUT STREET, PHILADELPHIA 2, PA.
PHONE: LOCUST 4-1400

MIDWEST SALES AGENT—The North American Trading and Import Co., 101 Arsenal St., St. Louis, Mo. Tel: PRospect 6-0858
SHIPMENTS FROM PHILADELPHIA, PA. AND GRETNA, LA.

Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Production and Study of Vitamin E Deficiency in the Baby Pig

● R. M. Forbes and H. H. Draper, University of Illinois; Journal of Nutrition, Vol. 65, No. 4, Aug. 10, 1958, pp. 535-545.

ABSTRACT

Two experiments were conducted utilizing 37 baby pigs to produce and study the characteristics of vitamin E deficiency in swine. All animals were approximately 3 to 4 days of age, of mixed breeding, and placed on 8 week experimental rations. In the first experiment, 17 baby pigs were fed as follows: 5 animals were fed the basal vitamin E-low basal "milk" diet. (The synthetic milk contained 13.5% dry matter. Dry matter was made up of casein, 27.3%; DL-methionine, 0.5%; lard (molecular distilled), 28.9%; cerelose, 33.7%; and minerals, 9.6%). Six were fed the same diet supplemented with 2% codliver oil (dry basis as a replacement for part of the lard), and the remaining 6 were fed the basal diet supplemented with 10 mg. of dl-alpha tocopherol acetate per 100 gm. dry matter. The pigs were fed ad lib with feed intake measured daily and weights of the pigs were taken twice weekly. Urine collections were made at 2 to 8 weeks, and at the termination of the trial histological and blood studies were conducted.

In the second experiment, 20 baby pigs were used, 10 of which received 5% codliver oil as a partial replacement of the lard, while the remainder received 10% codliver oil as a partial replacement of the lard. Half of each group received supplemental vitamin E at the rate of 10 mg. per 100 gm. of dry matter of the diet. After three weeks, the milk diet was replaced by a "dry" diet of essentially similar composition, but lower in protein. (Basal diet—20% casein; 0.3% DL-methionine; 28.9% molecular distilled lard; 45.3% cerelose; 3.5% minerals and 2% Woodflock roughage.)

The results of the first trial did not reveal any clearly defined symptoms of vitamin E deficiency, and there were no significant differences in weight gains or feed intakes. When the increased stress, of at least 5% codliver oil, was present in the diet as in the second experiment, deficiency symptoms occurred. The symptoms were as follows: Death, creatinuria, degeneration of skeletal and cardiac muscle, degeneration of the liver and presence of a brownish-yellow substance in the adipose tissue. The deficiency was not accompanied by changes in the electrocardiogram or by the ability of dialuric acid to hemolyze red blood cells. When vitamin E was present in the diet, even in the presence of high levels of codliver oil (10%), the symptoms of the deficiency were largely prevented.

COMMENT

At first glance this semi-purified diet type of work might not seem to have much practical application for feed manufacturers. However, body fat in hogs slaughtered for market has been noticed for several years. It has been postulated for some time that a deficiency of vitamin E was among the causative factors in this condition (Hove and Siebold, 1955; Gorham, Boe and Baker, 1951). This report gives further substantiation to the view that vitamin E may be important in the prevention of the trouble, although the mechanism is as yet unexplained.

This work was reported in a preliminary form in 1957, and represents the first clear-cut evidence of experimental vitamin E deficiency in swine.

●

Timely and Worth Noting

ENZOOTIC ATAXIA FROM COPPER DEFICIENCY IN SHEEP IN COLORADO—R. Jensen, D. D. Maag and J. C. Flint, Colorado State University; Journal of the American Veterinary Medical Assn., Vol. 133, No. 6, Sept. 15, 1958, pp. 336-340.

Abstract and Comment: Two adjacent flocks of sheep on farms near La Jara, Colo., were observed exhibiting symptoms of enzootic ataxia. The first flock consisted of approximately 110 crossbred Rambouillet ewes of various ages fed pasture during the summer, and range plus alfalfa and some grain supplement in winter. Lambing occurred in April. The first signs of the condition occurred in 1951 when five lambs showed symptoms. During the next five years the incidence increased until approximately 50% of the lambs of both sexes were affected. The second flock resembled the first flock in most respects except that the ewes were mostly 7 years old, and the disease did not appear on this farm until 1956 and 1957, when a small percentage of lamb crop was affected.

The symptoms observed were muscular weakness and incoordination which began in the hindlegs and progressed to the forelegs. Temperatures and appetites remained normal. In terminal stages, motor paralysis of the limbs caused by continuous recumbency was observed. In early stages, the symptoms were not observed unless lambs were driven or forced to move. The hemoglobin of ewes, normal lambs and affected lambs were all normal. Although many of the lambs died from emaciation and intercurrent disease, mildly affected animals were fattened and marketed.

Histopathological changes were limited to the central nervous system. The copper and molybdenum content of the liver showed a mean copper content of 12.7 parts per million (p.p.m.) and a molybdenum content of 50.7 p.p.m. for lambs with enzootic ataxia. The mean copper content for comparable normal lambs was 214.5 p.p.m. while the molybdenum content was 20.2 p.p.m.

Although numerous reports have been made of the occurrence of enzootic ataxia in Australia, Great Britain, New Zealand, South Africa and South America, this is the first report of the condition on the North American continent.

Company Opens Two New Western Offices

SAN FRANCISCO—Wilson & Geo. Meyer & Co., Pacific Coast distributor of agricultural and industrial chemicals, announced from its San Francisco headquarters the opening of a new sales office in El Centro, Cal.

At the same time, Wilson & Geo. Meyer & Co. Intermountain, an affiliate company, announced opening of a new sales office in Twin Falls, Idaho, and enlargement of its sales staff at Salt Lake City.

The 108-year-old Meyer firm is sales representative in the West for many agricultural and industrial chemical producers, including Stauffer Chemical Co. and Western Phosphates, Inc., phosphatic fertilizers; Norsk Hydro, Norwegian calcium nitrate and urea; Canadian Peat Moss, Ltd., peat moss; Eastman Chemical Products, Inc., chemicals and plastics and Semet-Solvay division of Allied Chemical Corp., coke.

The firm has district offices in Los Angeles, Portland, Seattle and Salt Lake City.

Iowa State Staffers Add to Swine Book

AMES, IOWA — Four staff members of Iowa State College are contributing authors to "Diseases of Swine," a new book published by the Iowa State College Press.

Writing in their own special fields, Dr. P. C. Bennett, Dr. H. E. Biester, Dr. L. H. Schwarte, and Dr. W. P. Switzer contributed five chapters to this reference for teachers and students of veterinary medicine and practicing veterinarians.

The book is a one-volume encyclopedia of swine disease information for use in practice, schools, and research. The 48 authors, all authorities in their fields, were drawn from schools of veterinary medicine across the nation.

Chief editor was Dr. Howard Dunne, professor of veterinary science, Pennsylvania State University.

"We sell a lot more feed since we installed our BROWER MIXER"

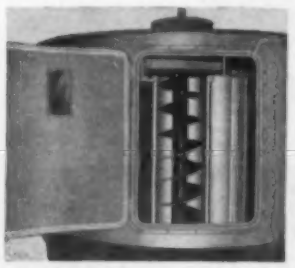
Says Lewis Olson, Manager, Kasbeer Farmers Elevator Co. Kasbeer, Illinois

"We just had a grinder until we got our 2-ton Brower installed. We are sure pleased as we do more grinding now and sell a lot more feed. Our Brower Mixer has increased the number of our custom mixing customers 25% and our custom mixing profits 25% or more".

BROWER Whirlwind MIXER

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL—a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes—700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction—built for years of trouble-free service



Easy to get into through large hinged service door and hinged conveyor sleeve.

Note mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of feed being mixed.

WRITE for FREE CATALOG

BROWER MFG. CO.
402 N. 3rd, Quincy, Ill.

World's Largest Selling Mixer

How much E is enough?

To insure adequate nutrition these authorities now recommend adding vitamin E supplement to feeds at these levels.

For literature citations, write to DPi.

Source	Type of Feed	Supplementation in International Units of Vitamin E per ton
Dr. Myron W. Pasvogel Dept. of Poultry Science University of Arizona, Tucson, Arizona	Chicken Layer (With BHT)	5,000
	Chicken Breeder (With BHT)	5,000
Dr. E. P. Singsen Dept. of Poultry Science University of Connecticut Storrs, Connecticut	Chick Starter and Broiler	
	(Without BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	4,000 to 8,000
	(With BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	Zero to 8,000
	Turkey Breeder (All-mash)	20,000 to 30,000
Dr. Milton L. Scott Dept. of Poultry Husbandry Cornell University Ithaca, New York	Turkey Starter	5,000
	Turkey Grower (All-mash, 24% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 20% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 18% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 16% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Finisher (All-mash, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (With grain, 20% protein,† BHT, and brewers' dried yeast)	10,000
	Turkey Breeder (With grain, 24% protein,† and brewers' dried yeast)	40,000
	Turkey Breeder (All-mash, 18% protein,† with brewers' dried yeast)	30,000
	Duck Breeder (With brewers' dried yeast)	7,000
	Chick Starter†	5,000
	Broiler†	5,000
	Chicken Breeder (All-mash)†	5,000
Dr. T. D. Runnels Dept. of Animal and Poultry Husbandry University of Delaware, Newark, Delaware	Broiler (in batteries)	5,000
Dr. Henry L. Fuller, University of Georgia Poultry Department, Athens, Georgia	Broiler	Zero to 4,000
Dr. Stanley L. Balloun Dept. of Poultry Husbandry Iowa State College Ames, Iowa	Turkey Starter	7,000
	Turkey Grower (All-mash)	5,000
	Turkey Breeder (All-mash)	10,000
	Chicken Breeder (All-mash)	5,000
Elbert J. Day, Mississippi State College Dept. of Poultry Husbandry State College, Mississippi	Turkey Starter	8,000
New England College Conference	Turkey Starter	10,000
	Turkey Grower	10,000
	Turkey Breeder	30,000
Dr. Edward C. Naber Dept. of Poultry Science The Ohio State University Columbus 10, Ohio	Turkey Starter	8,000
	Turkey Grower	8,000
	Turkey Finisher	8,000
	Turkey Breeder	8,000
Dr. S. J. Slinger Ontario Agricultural College Guelph, Ontario, Canada	Turkey Starter and Grower	
	(Without BHT)	6,700
	(With BHT)	5,000
	Turkey Breeder	
	(Without BHT)	10,000
	(With BHT)	6,700
Dr. C. W. Carlson Dept. of Poultry Husbandry South Dakota State College Brookings, South Dakota	Turkey Breeder	10,000
	Chicken Breeder	10,000
	Turkey Starter	4,500
	Chicken Starter	4,500
Dr. J. R. Couch Poultry Science Department Texas A. & M. College College Station, Texas	Chick Starter and Broiler	5,000
	Chicken Breeder	10,000
	Turkey Starter and Grower	5,000 to 8,000
	Turkey Breeder	20,000
	Chicken Layer	2,500
Dr. Leo S. Jensen State College of Washington Dept. of Poultry Science, Pullman, Washington	Turkey Breeder	10,000 to 20,000

		Supplementation in International Units of Vitamin E per mink per day
Dr. John R. Gorham Dept. of Veterinary Pathology State College of Washington Pullman, Washington	Mink adults (Nov. 1-June 1)	5 units
	Mink kittens (June 1-Nov. 1)	10 units
	Mink kittens (treating an outbreak of yellow fat disease)	20 units

*Dr. Singsen's recommendations cover vitamin E from all sources. This allowance may be reduced in the presence of an antioxidant as shown.

†When less than 50 lb./ton of alfalfa are used on all-mash basis, and/or when there is reason to suspect harvest or storage damage to critical ingredients.

One pound of Myvamix® Vitamin E Feed Supplement contains 20,000 International Units of Vitamin E on a soy grit base. The vitamin is in the form of *d*-alpha-tocopheryl acetate. This makes it stable against heat, long storage, and the influence of other feed ingredients. Further stabilization of *d*-alpha-tocopheryl acetate is unnecessary. ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

producers of ***Myvamix*** *Vitamin E*

DPi

Also . . . vitamin A . . . distilled monoglycerides . . . some 3700 Eastman Organic Chemicals for science and industry

Distillation Products Industries *is a division of* **Eastman Kodak Company**

Trends in the Turkey Business

- **Production areas — smaller turkeys**
- **Integration in the turkey business**
- **New husbandry techniques**

By T. R. Williams
Hales & Hunter Co.

EDITOR'S NOTE: The accompanying article is from an address given by T. R. Williams, turkey specialist for Hales & Hunter Co., Chicago feed manufacturer, to the Ohio Poultry Industries Conference & Exposition held recently in Columbus, Ohio. In the article, Mr. Williams summarizes likely future developments in the turkey industry.

In taking a close look at trends in the turkey business, we are interested primarily in the answers to these basic questions:

1. Where will the turkeys be produced in the years just ahead? And what kind of turkeys will be produced?
2. Will integrated operations take over the production of turkeys?
3. What new husbandry techniques will be applied to the business?

Where will the turkeys be produced?

Right now, the turkey business is expanding rapidly into the general area including parts of Missouri, Arkansas, northern Alabama and Georgia and over into the Carolinas. An attempt is being made to move turkey production into those areas where the chicken broiler business mushroomed a few years ago. Large operators are attracted by the relatively cheap land and relatively cheap labor. But, there is another factor just as important, and that is a certain attitude on the part of the people in those areas.

People Attitude

Let's dwell on this people attitude just a bit. Recently, I made a trip to Montgomery, Ala., to meet a turkey grower and hatcheryman from the state of Virginia. He was exploring the possibilities of setting up a production unit in Alabama.

This is what I learned: In order to get this project off the ground it was necessary to have a processing plant. Five different towns had already offered to build plants for the project. These towns would build the processing plant and turn it over to the turkey operation for payout over a period of 25 years. These towns wanted to establish a payroll for the community. The bankers in the area were scrapping over territorial rights. Each was fighting for his share of the brooder house and equipment financing. And, growers galore were standing by waiting to see what sort of production contract would be offered.

I could cite other examples of a similar nature. But the point I want to make is that just this people attitude on the part of the towns, or the part of the bankers, and on the part of the producers is making this fast expansion in the South possible. And it is something that the turkey industry in Ohio or Indiana or any of the northern or midwest states must reckon with.

Midwest Has Tools

And the northern and midwest states have the tools to reckon with that situation. These areas have several advantages:

1. They can produce a cheaper pound of turkey meat. They are closer to the supply of grain and protein.
2. They can produce a cheaper pound of turkey meat because their labor supply is of higher quality. There is a vast difference between a diversified Ohio farmer who likes turkeys—and you have to like them—and the southerner who measures his worth in terms of square feet of floor space.
3. The northern and midwest producers are closer to the large population centers which will consume the

(Turn to TURKEY BUSINESS, page 86)

Stanfordville, N. Y.

Wirthmore Feeds Inc.
Waltham, Mass.

Gentlemen:

I have been a consistent user of Wirthmore Feeds since 1953. The Wirthmore service representative in this area is unqualifiedly the finest serviceman of any I have ever met, and I have met most of them. I buy feed from Wirthmore Stores, Millerton, N. Y. The manager, Dick Tanner, and all the men who work there are fine fellows.

I like Wirthmore feeds, I like the Wirthmore service representative, I like the fellows at the Wirthmore store, I like you and your company.

Sincerely yours,
H. K. Hill

Unsolicited letter from a Wirthmore customer

WIRTHMORE HAS WHAT IT TAKES TO MAKE FRIENDS FOR ITS DEALERS

WIRTHMORE

WIRTHMORE POULTRY · DAIRY · STOCK FEEDS

Serving Agriculture Through Research

Wirthmore Feeds Inc., Waltham 54, Mass.

5 REASONS TO BUY CLEVELAND VIBRATORS

1 They save you money.
Cleveland Vibrators guarantee a full flow of feed every time your bins are opened.

2 They will not damage your bins.
A properly mounted Cleveland Vibrator will not damage or weaken your bin or its supports.

3 The initial cost is low.
An air or electrically operated vibrator will cost you between $42 and $176, depending on bin size, complete with mounting brackets and control accessories—fob. Cleveland.

4 They are inexpensive to operate
Cleveland Vibrators operate only when your chutes are open.

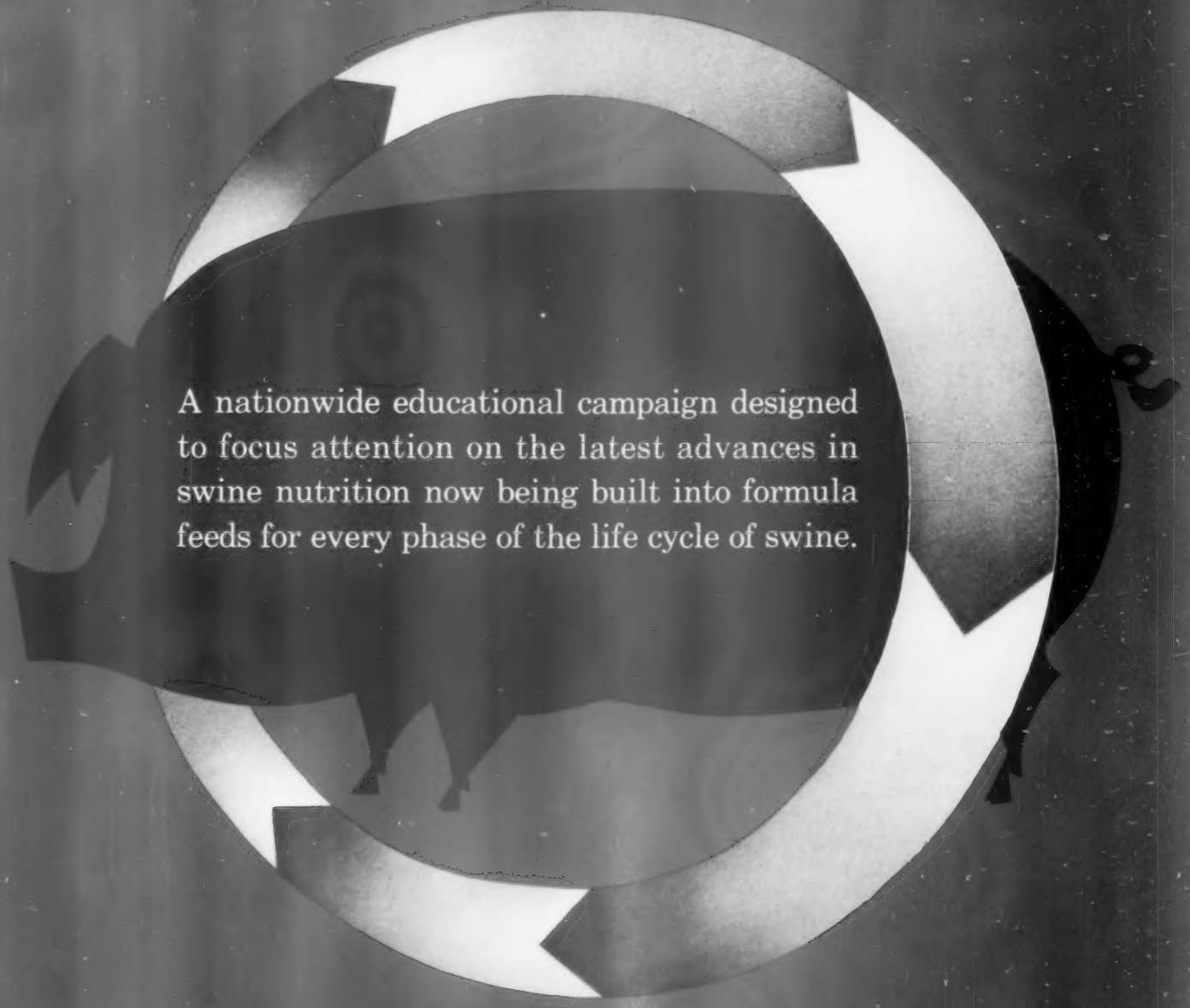
5 They are easy to install.
Any good mechanic can mount a Cleveland Vibrator in a couple of hours.

Write for your catalog and price list today.

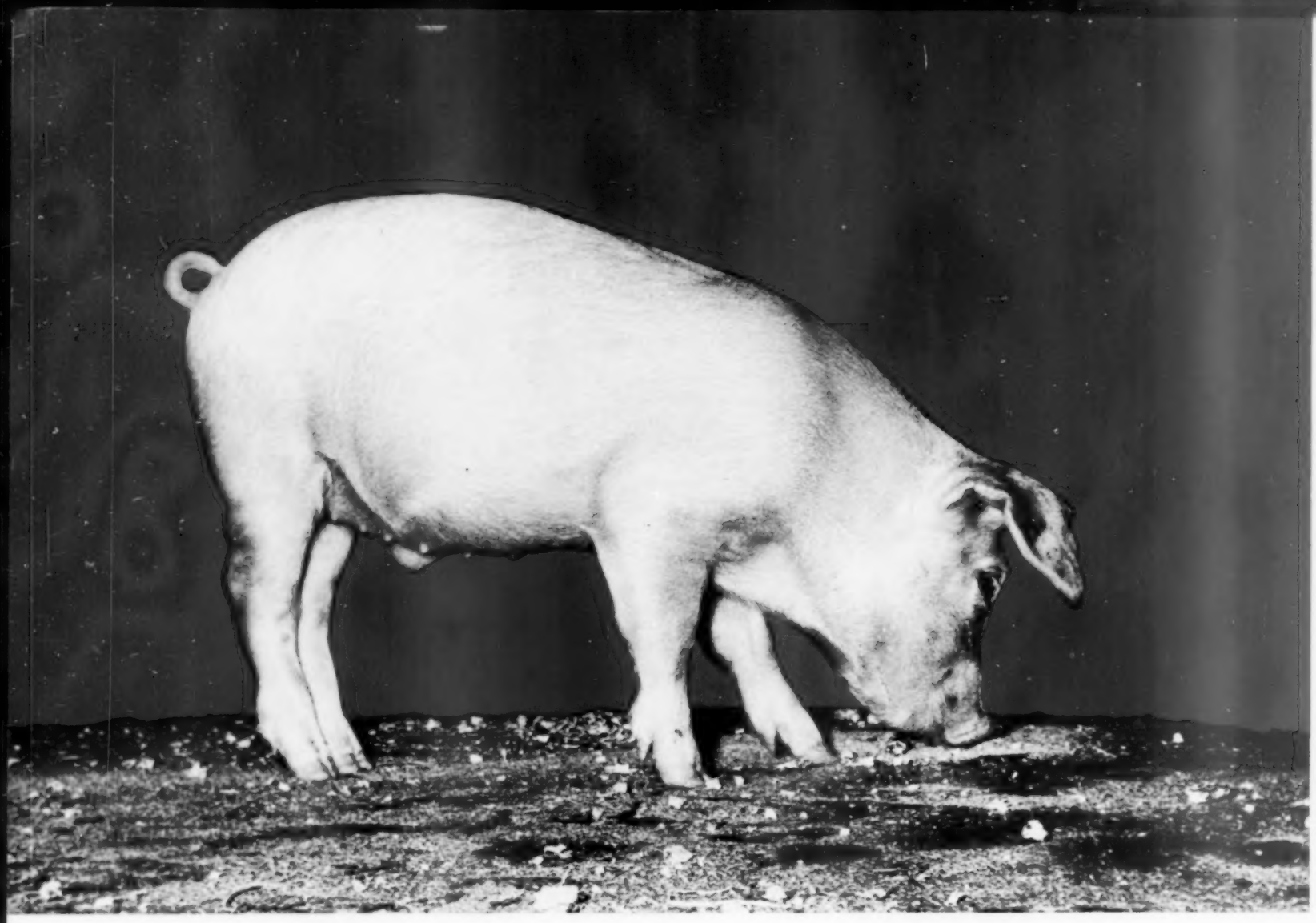
THE CLEVELAND VIBRATOR CO.
Dept. F11A, 2929 Clinton Av., Cleveland 13, O.

New help for your Swine line for '59

LIFE CYCLE FEEDING



A nationwide educational campaign designed to focus attention on the latest advances in swine nutrition now being built into formula feeds for every phase of the life cycle of swine.



HOW LIFE CYCLE

New sales-building program helps you sell your entire feed line—from breeder to feeder to market

Tie it in with your present program

The prime objective of the Life Cycle Promotion is to sell the concept of Life Cycle Feeding *with formula feeds.*

Much progress has been made in this direction in recent years. But much still needs to be done due to the natural lag between scientific concept and feeder acceptance:

- Today, feed nutritionists have proved the value of Life Cycle Feeds from pre-gestation to market . . .
- The average grower, however, is still chiefly concerned with formula feeds for the growing and finishing periods . . .
- And the feed manufacturer is actively expanding consumer interest back to the farrowing phase of the Life Cycle.

The Life Cycle Promotion was designed to help the feed industry narrow this gap by promoting Life Cycle Feeding with *formula feeds straight through.*

The Time is Ripe

The broiler industry has shown how feeding, breeding and management progress can bring cheaper, more efficient production of meat—with expanded markets for both the meat and the feed needed to produce it.

Today, the same factors which led to the specialization of the broiler industry are at work in the swine industry. This transition period is the ideal time to expand the consumption of formula feeds through an educational program on the need for Life Cycle feeding.

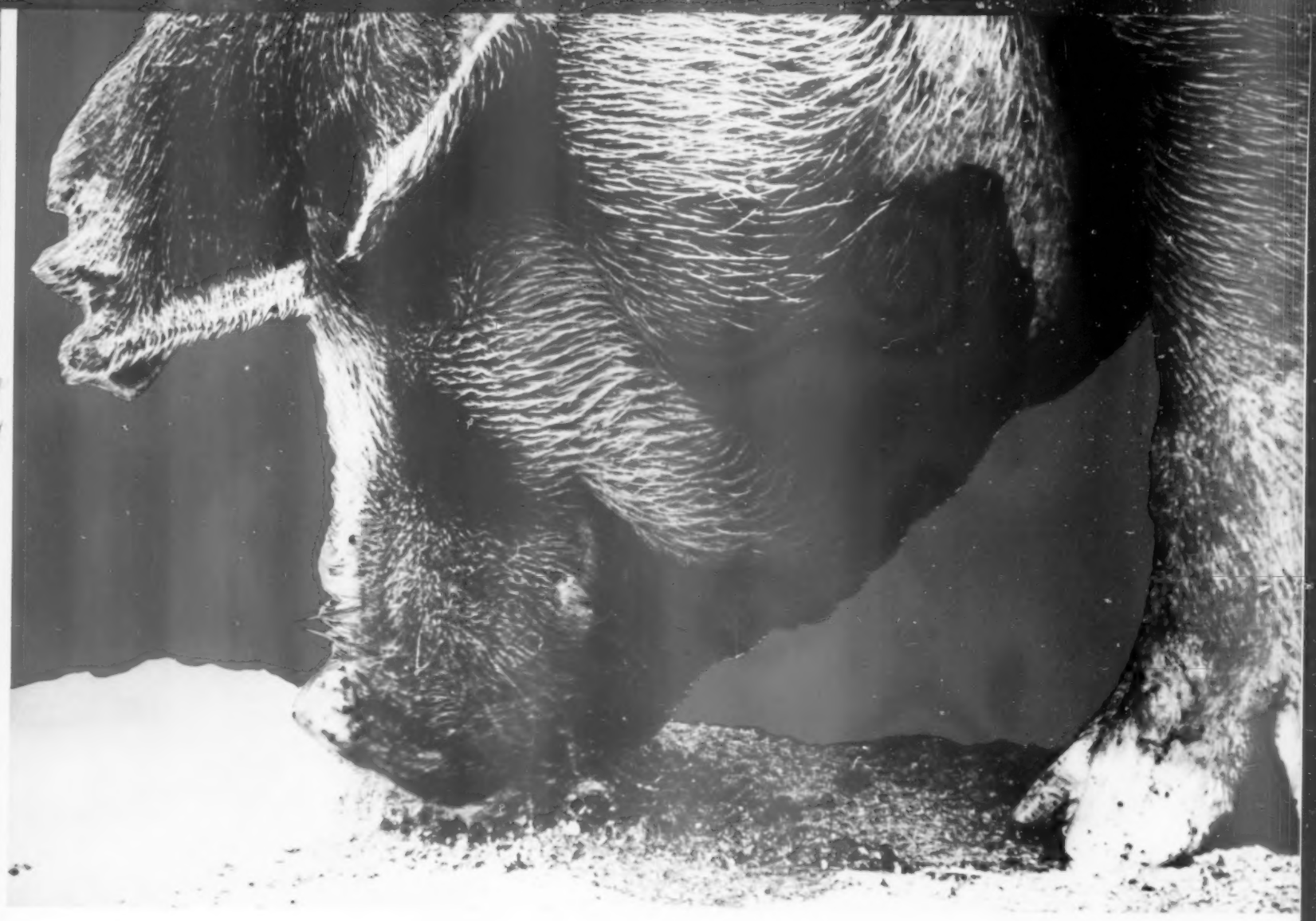
The Need is Here

The incentive to become a top producer is great—the pay is good. Under today's market conditions the average producer could increase his profits 5 to 6 times per litter. How can this be done?

The average farmer saves 7 pigs per litter, puts on 100 lbs. of gain at a cost of $14.25, makes $1.50 profit on a 200-lb. hog sold at $15 per cwt., for a total litter profit of $10.50.

Top producers can wean as many as 10 pigs per litter, get 100 lbs. gain for $12, make $10 profit per hog on a $15 market, for a litter profit of $60.

Here's where Life Cycle Feeding Programs fit in. By promoting the concept of good management and balanced nutrition from pre-gestation to market with formula feeds, you help your customers get—and wean—more pigs per litter . . . raise more pounds of pork—cheaper, faster, for more profit over feed costs.



FEEDING BUILDS NEW MARKETS

Swine Feed Promotion in a Package

IT SELLS THE NEED . . . YOU SELL THE FEEDS–AND SELL THEM AS A PROGRAM

Pfizer's new Life Cycle Swine Feed Promotion is a fully rounded, national market-building promotion, complete with ads in national, regional and state farm or livestock publications . . . local radio and television . . . slide film . . . publicity and public relations programs . . . customer educational material . . . point-of-purchase helps . . . dealer education material—AND—TWO GIANT CONTESTS —one for your customers . . . and one for you.

HERE ARE THE LIFE CYCLE FEED OPPORTUNITIES:

- Pre-gestation
- Gestation
- Lactation
- Pre-starter
- Starter
- Finishing
- Growing and Fattening
- High-Level Medicated

Use them to create new feed sales . . . Sell them as a program and . . . . . .

MAKE YOUR **LIFE CYCLE FEEDS** BETTER WITH

Terramycin®

BRAND OF OXYTETRACYCLINE

By supplementing your feeds with Terramycin at nutritional levels specifically recommended for each phase of the Life Cycle . . . and by backing up each feed with a disease-fighting feed containing Terramycin at high levels, you will be able to sell:

LOWER FEED COSTS

an experiment with 130 pigs

GAINS

CONTROL	
TERRAMYCIN	10% extra gains

FEED

CONTROL	
TERRAMYCIN	5460 lbs. feed saved

COST @ 4¢ LB. FOR FEED

CONTROL	
TERRAMYCIN	$1.05 saving per pig

LESS FEEDING TIME TO MARKET WEIGHT

CONTROL	
TERRAMYCIN	17 days saved

BETTER HEALTH

When used at recommended levels, Terramycin in feeds can:

PREVENT OR TREAT

Scours or bacterial diarrhea.
Secondary diseases.
Atrophic Rhinitis (aid in maintenance of weight gains and feed consumption in the presence of this disease).
Leptospirosis (reduce incidence of abortion and birth of weak or dead pigs).

FASTER GAINS

	GROWTH INDEX, SWINE	
	Low Level Antibiotic under normal conditions	High Level Antibiotic under unusual conditions
Terramycin	117.6	190
Bacitracin	110.9	99.5
Penicillin	110.4	97
Streptomycin	109.0	128
No antibiotic	100.0	100.0

Based on typical responses in growing and fattening swine at leading Agricultural colleges, reported in "Practical Aspects of the Use of Antibiotics in Rations of Livestock", 1957.

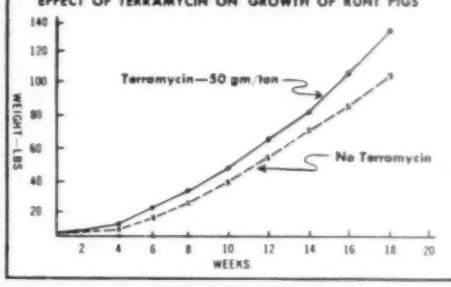
BETTER FEED EFFICIENCY

	Control (no antibiotic)	Terramycin in feed
Average daily gain, lbs.	1.35	1.63
Average daily feed cons., lbs.	4.90	5.46
Average feed per lb. gain, lbs.	3.62	3.35

(Typical response from 1958 trial.)

FEWER RUNTS

EFFECT OF TERRAMYCIN ON GROWTH OF RUNT PIGS



SEE YOUR PFIZER REPRESENTATIVE SOON FOR COMPLETE DETAILS, OR CALL OR WRITE:

Pfizer

Chas. Pfizer & Co., Inc.
Science for the world's well-being.

630 Flushing Ave., Brooklyn 6
6460 W. Cortland St., Chicago 35
7600 Ambassador Row, Dallas 7
5251 Peachtree Industrial Blvd., Chamblee, Ga.
1500 16th St., San Francisco 3
In Canada: 5330 Royalmount Rd., Montreal 9, P.Q.

Steady Turkey Prices Predicted

WASHINGTON — Turkey prices from now until the end of 1958 probably won't be much different from what they were a year ago, the U.S. Department of Agriculture reports this week.

Favorable and unfavorable price-making factors through December appear to be about in balance, according to the report.

In mid-September, turkey prices were about 0.8¢ higher than the previous September, but in the last few months of 1957 prices were on an upward trend, while this year they have stayed even from July to early fall.

One factor seen by the report as a favorable effect on farmers' prices is this year's 4% cut in turkeys raised. This, considered together with the population increase occurring each year, means per capita production is down 5%.

Offsetting this, however, are the large stocks of turkeys in storage and the awkward monthly distribution of this year's turkey hatchings.

Storage stocks are above year-ago levels and will tend to hold down prices, the report said. Prices for the remainder of the year will also have to withstand the effects of the large late hatch of poults. Figures for June and July indicate that November and December slaughter will be larger than in those months last year, contrasting with the below-year-ago slaughter rates in the earlier months of 1958.

Iowa Feed Company Expands Bulk Output

OSKALOOSA, IOWA—The J. H. Wake Feed Mills, Oskaloosa, is expanding its bulk feed plant to increase production by three times and to meet a growing demand for bulk livestock feed in pellet form, the company has announced.

Included in the new installation will be bins for grains, feed bins, an automatic mixing system and a pellet mill. Two new trucks are also being added, making a 19-truck fleet.

The new plant will be equipped to make complete hog and lamb rations. Phil Wake, plant manager, said the existing plant will continue to manufacture all sack feeds and to service outside stores.

With the new plant, Mr. Wake said the firm plans to eliminate its present night shift. The firm will also install bins at its other locations to increase their volume. The firm operates two plants in Oskaloosa, a branch at Ottumwa and retail stores in Oskaloosa, Ottumwa, What Cheer, Hedrick and Packwood, all in Iowa. The company manufactures Circle Brand Feeds.

R. Shanaman Resigns As Head of Pratt Labs

JUNCTION CITY, KY. — Richard R. Shanaman has announced his resignation as president of Pratt Laboratories, Inc., manufacturer of animal health products.

When control of Pratt was sold to Wesson Tool Co. in 1957, Mr. Shanaman agreed to remain with the company for at least a year to facilitate the transition occasioned by the new ownership. During this year, the plant was moved from Hammond, Ind., to consolidate all manufacturing and marketing activities in Kentucky, new products were added to the line, and an enlarged advertising and promotional program was inaugurated, the company points out.

Mr. Shanaman held executive positions with manufacturers of electrical equipment in Philadelphia before joining the Pratt organization in 1954. He has announced no immediate plans but will return east on personal business before relocating.

Directors of Pratt Laboratories, Inc., have named L. Wayne Cooper general manager. Mr. Cooper joined Pratt in 1937, later was named superintendent of the health products division, and plant manager at the time of the move to Kentucky.

Cable Address: Parrheim

P&H

GRAIN • FLOUR • FEEDS •

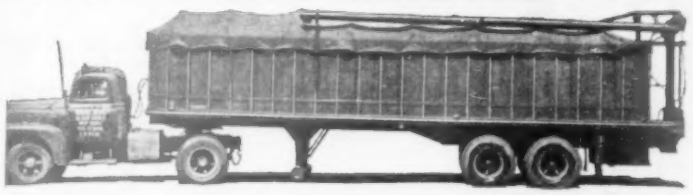
Domestic & Export

PARRISH & HEIMBECKER LIMITED

Export Office — TORONTO, CANADA

WINNIPEG — CALGARY — MONTREAL

-NOW . . . Load or Unload Bulk Feed-



with the PAMCO Back Saver

★ SEMI-TRAILER UNIT (above)

- Power take-off or gasoline engine operated.
- Minimum breakage of pellets.
- All hydraulic unit with all controls on rear corner of box.
- Pamco engineered swivelling and reversing discharge auger makes it possible to load without detaching auger.
- Swivelling discharge auger raised and lowered hydraulically.
- Each compartment can be unloaded individually. Conversion units can be mounted on your grain box.

★ BULK-BAG BOX

for complete information write:

PRODUCTIVE ACRES MFG. COMPANY

406 BROADWAY KEOTA, IOWA PHONE: ME 63071

OTHER INSTALLATION POINTS: Englewood, Colo.; East Grand Forks, Minn.; Delphi, Ind.; Portland, Ore.; Jefferson, Ga.

Your protection assured by our laboratory control

Lime Crest TRADE MARK BRAND

Rigid laboratory control is not just a hobby! Nor is it a luxury. It is an absolute necessity for the feed manufacturer who wants to be certain that his feeds contain what his nutritionist says they should contain.

Lime Crest trace-mineral pre-mixes are made under rigid laboratory control. You can use them with full assurance that they will always put into your feeds what they are supposed to put there. *You* are protected by *our* laboratory control . . . and our research.

LIME CREST TRACE-MINERAL PRE-MIXES

Made by LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY

World's Largest Producer of Crystalline Calcite Products

CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

Feed Service BULLETIN BOARD

IDEAS TO HELP YOUR CUSTOMERS

"Action" on Scours

"Quick action is an absolute must in combatting diarrhea or scours in newborn calves," according to Dr. James Wadsworth, University of Vermont animal pathologist. He said the disease, probably caused by a virus, usually strikes within the first 10 days of a calf's life and sometimes reaches epidemic proportions in the best-run dairies.

Infection occurs through the mouth from contaminated teats and bedding, and sanitary measures alone fail to prevent the spread of calf scours, added Dr. Wadsworth. Treatment with sulfa drugs or antibiotics works well in some cases and fails in others, but treating with antibiotics starting at birth and continuing for several days is often effective, he continued. It is important to provide individual quarters for newborn calves to help prevent scours.

The disease progresses rapidly, causing deaths within a few hours or days. A profuse diarrhea occurs, made up of a light-colored liquid. Pneumonia symptoms are rare. The animal's temperature seldom goes above 105 degrees and may be lower than normal, said the pathologist. He also recommended consultation of local veterinarians for treatment and prevention.

◆

Sorghum Feeding Tips

Grain sorghums can be used as the entire grain source in growing, finishing and breeding rations for swine, and the crop produces pork equal in quality to that of corn, says Donald F. Engel, livestock specialist at the University of Nebraska.

Figuring the feeding value of grain sorghums at about 90 to 95% that of corn when fed to hogs, he points out that producers can figure on their hogs requiring 25 to 40 lb. more sorghum than corn to produce each 100 lb. of gain.

There is no advantage to soaking sorghum grain for hogs. Sorghums can be fed whole if the grain is self-fed; however, they should be ground for hogs if they are hand-fed, to cut down on waste, said the specialist. And the grain sorghums are very deficient in lysine, an essential amino acid for swine. Feeding soybean oil meal, meat scraps, tankage or fish meal will supply this and other essential amino acids.

◆

Cannibalism Checklist

There are several things which may cause feather-picking or cannibalism in a poultry flock, and there's a solution for each one.

Limited feeding and watering space, crowding, lack of proper ventilation, irritation caused by lice or mites, or the energy level of the diet and the form in which it is fed, all may be factors in causing the trouble, says Ben Wormeli, poultry specialist at Texas A&M College.

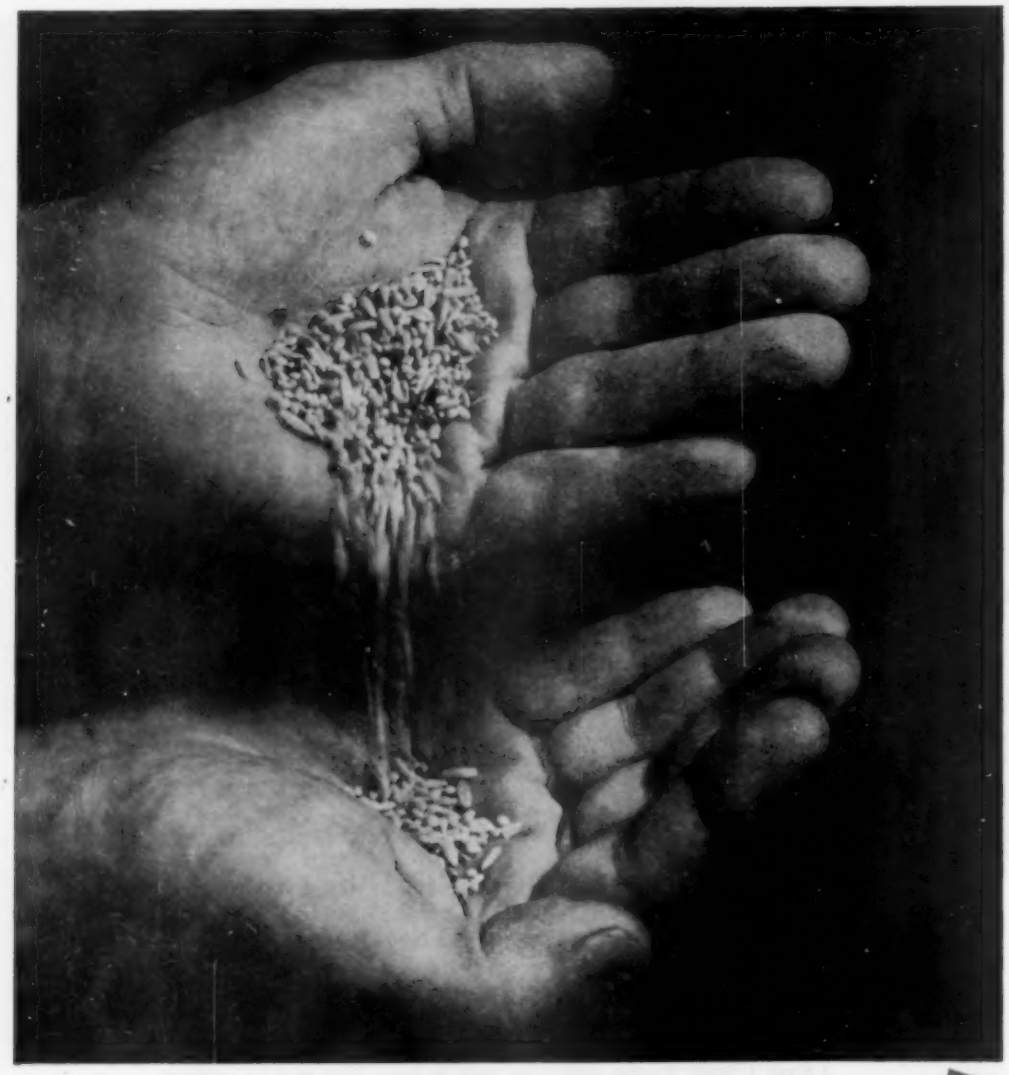
At this season, when pullets have been or are being housed, a close watch should be kept for either the "featherpickers" or those being attacked. Mr. Wormeli says the trouble can be kept at a minimum by following some of these management practices:

Keep the birds comfortable in a well-ventilated house; have plenty of well-distributed feed and water space; eliminate external parasites; feed diets higher in fiber and try feeding mash instead of an all-pellet ration.

The surest way to combat the trouble, of course, is to debeak the birds, providing the job is done properly.

$40,000 FIRE LOSS

PETERSBURG, ILL.—Fire caused an estimated $40,000 damage recently to the Walter Dunham Elevator at Atterberry, Ill., four miles north of Petersburg. The elevator, containing 7,000 bu. of grain and 12 tons of feed, was destroyed. Cause of the fire has not been determined.



Got the Seed of an Idea?
Plant it with Crown Multiwall!

- Is it practical to ship waffles in Multiwall Bags?
- Are cottage cheese curds too wet for packaging in Multiwalls?
- Is it economical to ship goose down feather pillows in Multiwalls?

These are just a few of the questions being answered by Crown Multiwall's Specialty Products Department — a unit which takes *your* idea for a new kind of Multiwall, evaluates it, designs a bag to meet the requirements, then field-tests it for trade acceptance.

We're now developing, for instance, a technique which will enable seed inspectors to extract samples from a Multiwall without permanent injury to the bag.

Providing you with a "brain factory" in the form of our Specialty Products Department is one more proof our designers, engineers, and packaging experts are constantly searching out improved methods of meeting your packaging needs.

Plant the seed of your idea with us! We'll do the spade work in trying to turn it into a reality!

Call Crown Multiwall about your packaging problem.

CROWN ZELLERBACH CORPORATION

SALES OFFICES: ATLANTA • BIRMINGHAM • CHICAGO • COLUMBUS • DALLAS • DENVER • HOUSTON • KANSAS CITY
LOS ANGELES • MINNEAPOLIS • NEW ORLEANS • NEW YORK • PORTLAND • SALT LAKE CITY • SAN FRANCISCO • SEATTLE • ST. LOUIS

SEND FOR THE NEW
ELTON CONVEYOR CATALOG
It will save money for you!
CHANTLAND MFG. CO.
Humboldt, Iowa

DISTRIBUTED BY THE FOX COMPANY
FOXCO
QUALADEE
A and D
VITAMIN OIL
NEWFIELD NEW JERSEY
"PRODUCTS OF PROGRESS"

BACK OF YOUR REQUIREMENTS

IS THE

VANTRESS MALE PROGRAM

OF

Applied Genetics

PEDIGREE HOUSE

A Pure Line Progeny Testing Program, together with a Pedigree Cross-Bred Progeny Testing Program is constantly at work on new developments. Pictured is one of over three hundred individual pedigree single sire pens in use.

LAYING HOUSE

Our Duluth Farm maintains laying house sites which houses over 100,000 breeders at all times. Birds are reared in confinement and on range under average field conditions.

BROODING HOUSE

This is a close-up of the interior of a typical Brooder House at Chas. Vantress Farms. Facilities are maintained for starting 350,000 pedigree chicks per year.

The unequaled Technical Breeding Development Program of Chas. Vantress Farms, Inc. is based on precision measurements compiled with painstaking thoroughness. All characteristics that affect Production efficiency and consumer quality are included in sire family summaries and are used in breeding selection work. This program of Applied Genetics is why the Vantress Dominant White Male Line sires the nations leading meat chicks.

Chas. Vantress Farms, Inc.

DULUTH, GEORGIA

CHAS. VANTRESS FARMS, INC., DULUTH, GA. DOMINANT WHITE MALE LINE

Expansion Plans Revealed by AHI; Objectives Listed

DES MOINES — The Animal Health Institute, Inc., with headquarters at Des Moines, has revealed several steps in "adding new dimensions to its scope and activity."

According to D. L. Bruner, executive secretary, the group has established an objective to "represent feed additive manufacturers in all major areas where united action is desirable to fill the vacuum which exists, and provide a needed service which is not now available."

He said that present major areas where representation is required are state feed control and regulatory officials, federal regulatory bodies and the American Feed Manufacturers Assn.

The institute is also expanding its legislative committee to include additional legally and otherwise suitably trained men in active member companies. It is strengthening its public relations program in certain specific areas, and is bringing into the organization membership certain important firms in the animal health field, with the objective of being equipped to speak for the industry when and where united action is desirable, Mr. Bruner pointed out.

As another step, the executive secretary mentioned the institute's new headquarters office in Des Moines. The new office is staffed and equipped to render the additional services being planned, as well as the regular services performed by the institute.

Institute Objectives

Mr. Bruner listed the organization's present objectives as follows:

"1. To encourage the production of pure, safe and efficacious products intended for use in animal and poultry nutrition and in the maintenance of animal health.

"2. To encourage basic and applied research in the development of new and better products for animal agriculture and to encourage and promote better facilities and methods for the evaluation of such products.

"3. To encourage safe and efficient methods in the production, packaging, transportation and storage of such products.

"4. To encourage the adoption of constructive, uniform and reasonable laws and regulations pertaining to the production and sale of such products, and to cooperate with regulatory agencies in the reasonable enforcement thereof.

"5. To encourage and develop an active public relations program in the field of animal nutrition and health.

"6. To disseminate to its members information on governmental regulations and policies and on other subjects of interest.

"7. To cooperate with other allied industry associations and with governmental agencies for the betterment of agriculture.

"8. To encourage adherence by its members to high standards of integrity in the conduct of business.

"9. To endeavor to serve completely the trade association needs of each part of the industry which supplies products used in the production, nourishment and health of animals.

"10. In general, to carry on any business in connection therewith or incidental thereto not forbidden by law, with all powers conferred upon non-profit membership corporations by the laws of the state of Iowa provided, however, that no substantial portion of the activities of the corporation shall consist of carrying on propaganda or otherwise attempting to influence legislation.

Membership Categories

New membership categories have been adopted to become effective Jan. 1, 1959, as follows:

Active Members: Any person, firm or corporation engaged in the production and/or sale of biologics, pharmaceuticals or allied products for veterinary use, which are registered, labeled, advertised and/or promoted under the label or brand of the person, firm or corporation and (1) which are in dosage form labeled with directions for use, or (2) which are in forms intended for final use and are so labeled, including those requiring only simple dilution or addition to water or feed. Included are those persons, firms or corporations manufacturing or selling feed additives and medications which are advertised to the consumer by their trade names and which are intended for sale to feed manufacturers for inclusion in medicated feeds. Also included are manufacturers of instruments for the administration of dosage forms or for other uses in the practice of animal husbandry.

Affiliate Members: Any person, firm or corporation engaged in the production and/or sale of pharmaceutical chemicals or nutritional, prophylactic or therapeutic products which are intended for manufacturing purposes only and which are not labeled with directions for use by the consumer, and any person, firm or corporation engaged in selling dosage forms of such products which may be labeled with directions for use but which are not advertised or promoted under the seller's label or brand.

Associate Members: Any person, firm or corporation engaged in a business related to animal health and to the activities of active and affiliate members, such as distributors of animal health products of brands other than their own, packaging suppliers, machinery and equipment suppliers, trade journal publishers, and all others not specifically classified.

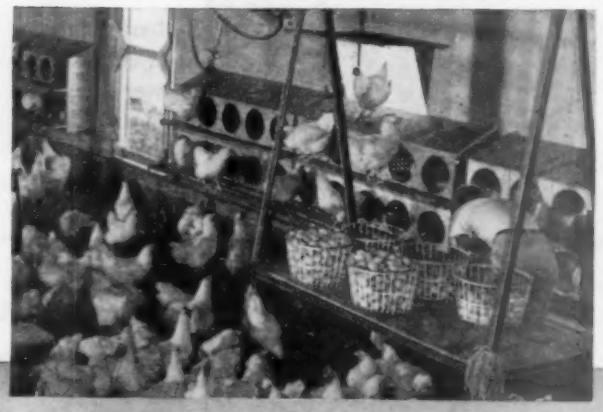
FIRM ADDS STORAGE

ASHLEY, N.D. — The Farmers Feed Co. here has added two buildings for storage. It now has a total capacity of 49,000 bu.

KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Board of Trade VIctor 2-4671
KANSAS CITY, MO.

IT'S ECONOMY WISE TO JERSEEIZE
WITH JERSEE
VITAL-MIN
a Pre-Mix
VITAMINS MINERALS
Made by the borders of VITAMINIZED and MINERALIZED GORGEN-TRATES since 1922.
Jobbers and Warehouses From Coast to Coast
THE JERSEE CO. MINNEAPOLIS MINN.
WRITE TODAY FOR DEALERS SALES HELPS!

Arsanilic Acid in
(PRO-GEN®)
...fills more egg baskets
all-season long!



Continuous high-level egg production plus improved feed efficiency

Here is a summary of the performance of Arsanilic Acid in practical feeding tests at five leading agricultural colleges . . .

	% More Eggs	% Less Feed per doz. eggs
S. Dakota Agricultural Experiment Station	1.8% to 4.2%*	0 to 7%*
Michigan State University	5.2%	3.5%
Texas Agricultural Experiment Station	7.9%	5.9%
Colorado Agricultural Experiment Station	13.2%‡	10.2%‡
University of Arkansas	7. %#	4.6%#
	14.9%##	11.2%##

*Range of four tests. ‡Five-month test. #Four-month tests. ##Combination of 50 Gm. Arsanilic Acid plus 15 Gm. furazolidone.

831981

Canada Ban on Weed Seeds in Feed Relaxed

OTTAWA—Canada has made it legal to sell beef cattle feeds containing up to 15% so-called injurious weed seeds when certain labeling requirements have been met and the viability of the seeds destroyed.

Authority was granted under an amendment to the Feeding Stuffs Regulations, which previously allowed only one half of 1% in mixed feeds.

Regulations were relaxed after a probe by the Canada Department of Agriculture into effects of feeding refuse screenings containing a high percentage of stinkweed seeds. Other research was conducted by the department and the University of British Columbia on the toxicity and nutritive value of such weed seeds.

Experiments gave reasonable assurance that "stinkweed" taint would not result if the feed is discontinued 48 hours before slaughter.

There are thousands of tons of refuse screenings available every year in terminal grain elevators, flour mills, and seed-cleaning plants across the country.

Pellets of heat-devitalized refuse screenings have been fed beef cattle in British Columbia and U.S. for some years. Although it could not be registered as a prepared livestock feed under the Feeding Stuffs Act, it was sold as a prescription mix with farmers taking responsibility for injury to their animals.

With the latest amendment, these feeds may be manufactured for general sales when registered under the Feeding Stuffs Act.

What effect this will have on the market for Canadian screenings in the U.S. could not be determined immediately by U.S. buyers. They said there has been a feeling among U.S. buyers that some of the exclusions under Paragraph 2 of the Seed Act should be waived and that the Canadian ruling will bring more pressure on this demand.

Four Carloads Grain Seized in New York

ALBANY, N.Y. — The New York Agriculture Department has announced that its inspectors have seized four carloads of grain containing highly toxic mercury compounds. The grain had been shipped from Wolcott to the port of Albany. Grain used for seed often is treated with mercury compounds to kill fungi and insects. Sometimes this treated grain gets mixed with grain going to market for feed. Inspectors here detected the mercury when they put samples of the grain under ultra-violet light.

GUEST SPEAKER

ST. LOUIS—Dr. Charles L. Lapp, professor of marketing at Washington University school of business and public administration, was guest speaker at a recent luncheon meeting of the St. Louis Feed Brokers Assn.

General Mills Plans New Research Center; Wider Diversification

MINNEAPOLIS — General Mills, Inc., Minneapolis, has announced plans to break ground next spring on a multi-million dollar research center. It will be built in Golden Valley, west of Minneapolis and 1½ miles north of the company's new general office building.

"The new center will provide facilities for exploring avenues to even wider diversification, and will turn intensified effort toward developing new high-nutrition, high-convenience food products. It also means markedly increased emphasis on basic research," said A. D. Hyde, vice president in charge of research. "Such a program will mean much toward the future, not only in food, but also in other areas."

A company spokesman said it is conceivable that basic research efforts at the new center might eventually be applicable to the development of products for the company's Larro feed division, but that no feed research as such will be conducted at the new facilities. General Mills feed research is done at its Larro Research Farm, Indianola, Iowa.

The new research center will be built in five steps, with the over-all final completion date extending to 1964-65. Floor areas will total about 360,000 sq. ft. The exact estimated cost of the structure was not disclosed.

As the first construction step, the main stem of the building is planned to be completed and ready for occupancy by June, 1960. The various wings will be built in later steps and occupied as soon as completed. Upon full completion, the center will be staffed with 500 scientists and associated workers.

Personnel for the new building will be transferred largely from the General Mills Central Research Laboratories in Minneapolis. The move, however, is expected to have very little, if any, effect on the total number of General Mills employees in Minneapolis.

Chemical and steroid research personnel will remain at the present research site.

California Farm Stores Show Sales Increase

SAN FRANCISCO—Sales made by farm and garden supply stores in California rose to $33,018,000 during the second quarter of 1958, representing a rise of about 6.7% over sales during the second quarter of 1957, reports the division of research and statistics of the California State Board of Equalization. Most of these stores also handle animal and poultry feed products.

Farm implements and related goods showed a slight decline during the same period, down to $47,602,000, a drop of less than .5%.

your laying feeds

...makes re-sale easier

all-season long!

Full egg baskets and the satisfied smile of your customers are the key to repeat sales on laying feeds.

For less than 40¢ per ton of complete laying feeds, Arsanilic Acid is proving to many feed manufacturers that it is a reliable aid to . . .

- continuous high-level egg production
- improved feed efficiency
- improved hatchability among breeding flocks
- improved feed sales

Arsanilic Acid can help your laying feeds meet the challenge of stresses and sub-clinical diseases that cause slumps in egg production . . . economically, too! (As laying flocks become larger and larger . . . and floor space per bird becomes smaller . . . this will become even more important).

Practical field tests at five leading Agricultural Colleges show that Arsanilic Acid increased egg production from 1.8% to 13.2%. Even at the lowest level of gain, this increase in egg production would net your customers 30 to 40 dozen more eggs per year from each 100 hens.

Arsanilic Acid in layer and pullet feeds gives outstanding results because of its low-cost and proved effectiveness. Plan now to take full advantage of this low-cost growth and production stimulant in 1959 in your Complete Breeder or Layer Feeds . . . Pullet Developer and Growing Feeds . . . Supplements or Concentrates . . . and Trouble Shooting Feeds.

New Technical Information Folder Available

For complete details on the value of Arsanilic Acid in Laying Feeds, including research and field tests, a new technical folder has been prepared for you. Ask for Bulletin No. 402—PRO-GEN® (Arsanilic Acid) for Pullet and Laying Feeds.

Arsanilic Acid
(PRO-GEN®)
a product of Abbott LABORATORIES
CHEMICAL SALES DIVISION, NORTH CHICAGO, ILLINOIS
IN CANADA: 1350 Cote De Liesse Road, Montreal 9, Quebec

PRO-GEN
ARSANILIC ACID ADDITIVE
Get it in the Midwest from
Carroll Swanson Sales Co.
Box 1034, University Place Sta.
Tel. CR 9-8881 Des Moines 11, Iowa

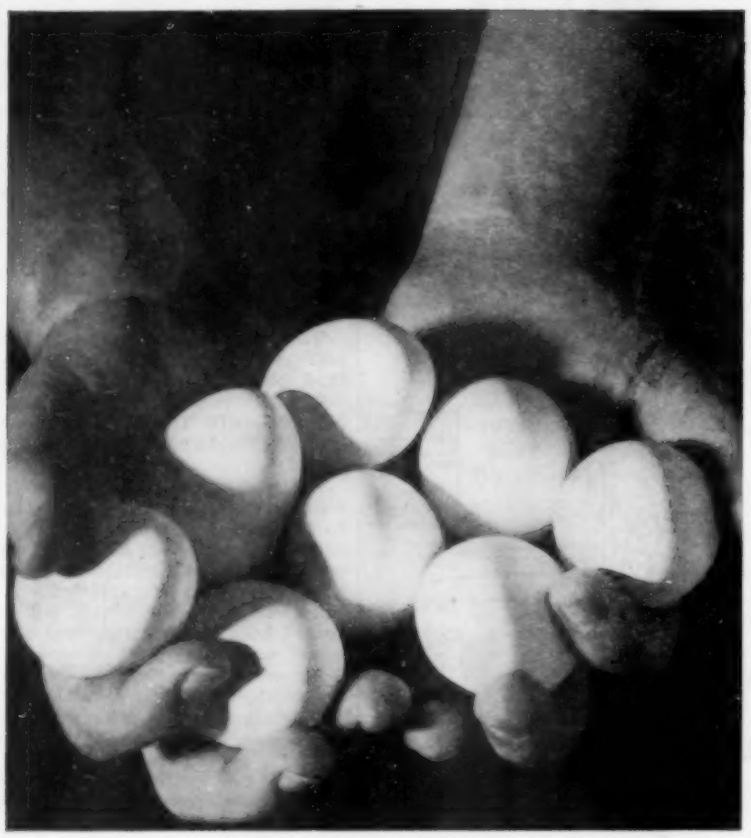
KEEP POSTED with
FEED FLASHES & FORECASTS

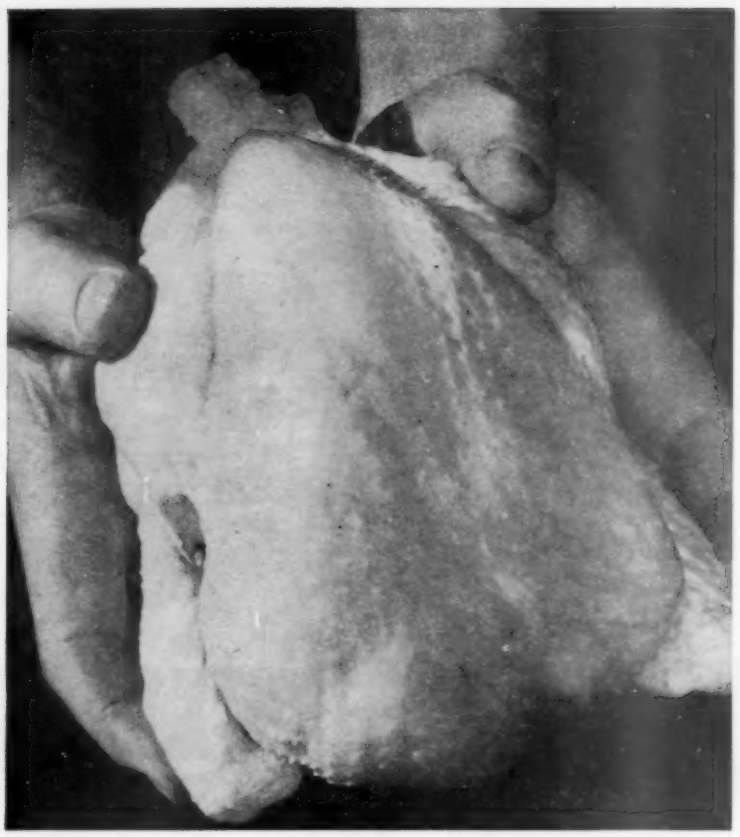
Know what's ahead in the fast changing Feed Industry. Get twice every month (1) FEED FLASHES & FORECASTS, a fact-packed summary of Feed Trade News (2) SALES IDEAS, a goldmine of selling helps (3) FEED MARKET REVIEW of USDA Market Reports. For Free Trial write to TOBIAS ENTERPRISES, 326 N. Michigan Ave., Chicago

Write for...
2 MONTHS FREE TRIAL

2 POULTRY PROFIT AIDS

STONEMO Granite Grit





SELL GIZZARD GRINDING
and More Eggs from Your Feed

For extra eggs, your customers' birds need gizzard teeth that are hard, sharp-cutting, quick-grinding, and the proper size. Stonemo hard granite grit is scientifically processed to give your birds *extra grinding surfaces.*

With each contraction of the gizzard, Stonemo Granite Grit rips open the tough hard film which encases the various nutrients of the finest mash. Stonemo also grinds fine the coarse scratch grains, making them more digestible, better used to produce more eggs.

In the latest work of Iowa State College, up to 10% more eggs were produced from the same feed when Stonemo was offered free choice, and with better feed conversion.

So, sell the importance of gizzard grinding with every lot of feed. Sell the right size Stonemo and watch your customers' poultry profits grow.

SELL GIZZARD GRINDING
and Extra Meat from Your Feed

If you have broiler customers who are having a hard time making a profit, here is a tip you and they will appreciate. In a series of feeding tests at our research farm, even when an all-mash diet was used, broilers were heavier, feed conversion was better, profits increased nearly ½ cent per pound against no grit—$16.85 per thousand birds.

Sell Gizzard Grinding, and your customers will find:

- **Birds will rid their gizzards of liter, fiber and feathers—make room for more meat-producing feed.**
- **Less feed will be used to produce a pound of meat, even on an all-mash feeding program.**
- **Birds get to market quicker—your customers start the next lot of broilers earlier—save time and money.**

COARSE SIZE STONEMO HARD GRIT MAGNIFIED 6 TIMES

Make STONEMO your Assistant Salesman

Whenever you sell feed for pullets or broilers, sell Stonemo with it, and make feed do a better job. Point out how changing to larger size Stonemo—Medium beginning the fourth week, Coarse beginning the seventh week—will increase feed efficiency and step up profits.

For further research facts about Stonemo, proper feeding directions, and sales aids including posters, newspaper mats, radio scripts, and the popular hit record "Sing Chicken Sing," write:

STONE MOUNTAIN GRIT COMPANY, INC.
Lithonia, Georgia

The Grit with the "EXTRA GRINDING SURFACES"

FROM ONE DEPENDABLE SOURCE

Sta-Kleen Nesting Material

SELL Sta-Kleen

Sta-Kleen Nesting Material is a natural to sell. Clean nests are so badly needed by poultrymen that Sta-Kleen almost sells itself.

Think of being able to tell your customers they can reduce the number of dirty eggs up to 80%.

Think of the sales appeal to a farmer's wife when you say that Sta-Kleen saves the chore of washing or cleaning eggs.

Think of selling the extra profit angle of marketing top-quality eggs—eggs with the bloom still on the shells.

But that's not all. You can also sell less egg breakage, less cracked shells, less unmarketable eggs, for Sta-Kleen is soft, resilient, and cushions the eggs.

Just as important as the right egg-laying environment is Sta-Kleen's remarkable ability to repel dirt and absorb moisture. Droppings are quickly dehydrated and easily removed from the nests.

What are Sta-Kleen's Advantages to You as a Dealer?

There are four big reasons for you to stock and sell Sta-Kleen. All four can increase your profits.

1. **Sta-Kleen sales give you a good margin of profit.**
2. **Sta-Kleen is a repeat item that constantly builds your business.**
3. **Sta-Kleen is nationally advertised to help you build volume fast.**
4. **Sta-Kleen is display packaged in 50 lb. multiwall bags. It's easy to buy right along with your Stonemo Granite Grit.**

So, order Sta-Kleen today from your supplier of Stonemo Granite Grit. Write direct for folders, posters, newspaper mats.

STONE MOUNTAIN GRIT COMPANY, INC.
Lithonia, Georgia

Sta-Kleen ...another fine product to increase poultry profits

Faster Weight Gains with

BOVEXTRA Live Rumen Organism Mixture

From Range to Full Feed in Only 8 to 12 Days!

BOVEXTRA CONCENTRATE supplies the billions of bacteria which work in the rumen, aiding digestion and turning feed into valuable meat. Add BOVEXTRA CONCENTRATE to your special formula or mix with commercial feed to speed conversion without causing digestive upsets or scouring. Cost just pennies per animal for entire conversion period.

Write for prices

DR. LEGEAR

Packaged in handy 50-lb. bags. Easy to bulk mix or may be sold as a top dressing.

Dr. LeGear, Inc. St. Louis 16, Mo.

FOR

WELL-BALANCED NUTRITIVE FEEDS

MIX PRODULAC

CORN DISTILLERS SOLUBLES WITH GRAINS

BOTH GRAIN FERMENTATION PRODUCTS

NADRISOL

CORN DISTILLERS DRIED SOLUBLES

These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

NATIONAL DISTILLERS PRODUCTS COMPANY

GRAIN PRODUCTS SALES

99 PARK AVENUE, NEW YORK 16, N.Y.

MOBILE PELLETER—To meet the demand for complete pelleted feeds in the Parkersburg, Iowa, area, Francis X. Hosch, Hosch Feed Service, built this mobile pellet mill. In the picture the machine is turning out a complete ration for the feeder calves in the background. Shown are (left to right): Gordon Lewis, operator of one of the firm's Daffin mobile units; Mr. Hosch, and Jerry Onnen, operator of the pellet mill.

Iowa Feed Man Makes Mobile Pelleting Mill

PARKERSBURG, IOWA—A feed man at Parkersburg has rigged up a mobile pelleting mill, and, as he puts it, "the way it looks now we will never be able to keep up with demand for pellets with one machine."

Francis X. Hosch, owner of Hosch's Feed Service, points out that pelleting in the Parkersburg area is something new—"there are no stationary mills within 50 miles of us."

He mounted a Hy-Flo pelleter, made by California Pellet Mill Co., on a 4-ton truck, and added a 100-h.p. diesel engine to power the pelleter. The outfit cost about $18,000.

Mr. Hosch said farmers gave him the idea to build his own pellet mill. "They kept telling me they would like to put all the feed—grain, supplement, even hay—into a pellet for easier handling and self-feeding," he commented.

The machine will turn out 2-4 tons per hour, depending upon what is being pelleted. No steam is used; a small amount of molasses serves as a binder.

Mr. Hosch charges by the hour, getting from $10 to $18 per hour, depending upon the number of hours run. Grinding, mixing and pelleting run from $7 to $10 per ton, depending upon the material pelleted and the time required.

The Hosch Feed Service operates three Daffin mobile units which take care of 95% of the grinding for the pellet mill.

Iowa Boar-Testing Standards Changed

AMES, IOWA — The Iowa Swine Testing Assn. has announced new boar-testing standards based on research at the pilot testing station at Ames.

Dr. Ralph Durham, animal husbandman at Iowa State College, said the new standards will be followed by the central testing station at Ames and by three new stations receiving boars now at Ida Grove, Eagle Grove and Ottumwa, Iowa.

The new program, he said, changes the weighting of the test index. Backfat depth as shown by live probes formerly counted as much as feed efficiency and rate of gain combined. Now all three have equal weight. Dr. Durham said the association directors made this change because the average backfat of boars submitted for test has been "markedly" reduced.

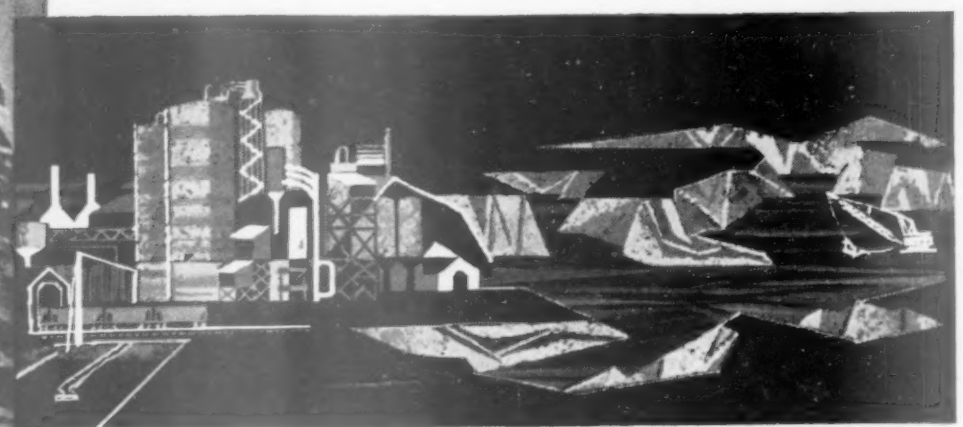
At the same time the directors stiffened the upper limit of allowable backfat. Any tested boar that measures more than 1.4 in. average backfat at 200 lb. after full feed will be castrated and sold for market pork. Formerly the station would pass boars with as much as 1.5 in. of average backfat thickness if their total test index was satisfactory.

PROFIT POINTERS — These men are viewing a series of "Profit Pointers" folders published by Oklahoma State University as a part of the joint management program of the university, Oklahoma Feed Manufacturers Assn. and Midwest Feed Manufacturers Assn. Left to right in the photo are Sewell Skelton, extension marketing specialist, Oklahoma State University, Stillwater; Victor Jorns, Shawnee (Okla.) Milling Co., president of the Oklahoma association; Ed Lemmons, head of the university information service, and Lloyd Larson, executive vice president of the Midwest association. The picture was taken at the recent Oklahoma Formula Feed Conference at Stillwater.

Natural wonders

made dynamic by man . . .

Slowly, wondrously, the myriad chemistries of nature yield up great treasures. But it remains for creative man to mold them to serve his needs.



and rich, natural phosphate deposits

made dynamic by modern technology to give you

dynamic **DYNA•FOS®**

today's most dynamic feed phosphate

You can count on Dynamic DYNAFOS to deliver full nutritional value from your feed formulas. It is beaded, made uniform in quality, high in biological availability, low in fluorine, and easy to handle. Wire or call for full information.

Creators of Living Minerals

MINERALS International CHEMICALS

PHOSPHATE CHEMICALS DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

the **new** name in dehydrated alfalfa

MIDWEST GREEN BANNER DEHY

ANY WAY YOU LOOK AT IT . . .

GREEN BANNER DEHYDRATED ALFALFA GIVES YOU THE BEST IN QUALITY AND SERVICE!

NEXT TIME— TRY MIDWEST

midwest alfalfa

KANSAS CITY 41, MO.
P.O. Box 534
HArrison 1-0732

FEEDSTUFFS
LEADER IN THE FIELD

HAPPY BIRTHDAY—The fifth anniversary of the Lucas Products Co., Bedford, Iowa, was a double-barreled celebration since it also marked a company move to an enlarged feed plant. Part of the three-day celebration planned by the firm to observe the twin event was an anniversary dinner for the company staff. Pictured at right above, cutting the birthday cake at the dinner, is Vane Lucas, president, while Mrs. Lucas, son Basil Lucas and son-in-law Scott Mason, both associated with the milling company, look on. Lloyd Larson, executive vice president, Midwest Feed Manufacturers Assn., Kansas City, was featured speaker.

Iowa Firm Moves To Enlarged Plant

BEDFORD, IOWA — Lucas Products Co., Bedford, celebrated its fifth anniversary here recently with a company move to an enlarged feed plant. Marking the occasion was a three-day celebration Oct. 23-25 which included an event for businessmen of the town, an anniversary dinner for the company staff and open house at the new mill for customers of the firm.

Vane Lucas, president of the company, founded it five years ago to produce grain balancing mixes. The company now produces a line of 19 feeds sold in southwestern Iowa. Plans are under way for an expansion of the line to include complete feeds.

In its expansion move, the Lucas firm purchased a larger plant formerly occupied by Cudahy Packing Co. and converted it to feed milling. With more space and a more efficient layout, the firm is adding new equipment in the form of a Wenger pellet mill with molasses mixer and a pellet cooler plus storage bins and conveying equipment. Plans are being made for additional grinding and storage capacity later.

Alabama Reports 26% Hike in '57-58 Tonnage

MONTGOMERY, ALA. — A 26% increase in feed tonnage sold during fiscal 1957-1958 (Oct. 1-Sept. 30) was reported recently by the Alabama Department of Agriculture and Industries.

The report showed 1,111,085.19 tons this year against 879,771 for the same period a year earlier. Of the 231,000-ton increase, poultry feeds accounted for nearly 200,000. Dairy feeds and hog feeds also showed substantial increases. Only oil meals were down in tonnage from the previous year.

Poultry feeds as a per cent of the total feed sold for each year was 63% in the fiscal year just ended, compared with 58% for the preceding year.

Summary of Feed Tonnage by Varieties Sold in Alabama for the Fiscal Year 1957-58 (Oct. 1 through Sept. 30) (Tons)

Varieties	Fiscal year 1957-58	Fiscal year 1956-57
Horse and mule feed	18,616.69	15,557.99
Hog feed	52,605.23	45,289.68
Dairy feed	101,793.06	86,539.82
Poultry feed	703,825.55	506,877.92
Oil meals	69,453.65	86,920.81
Cereal by-products	20,900.25	15,543.23
All Other Feeds	120,933.46	107,949.21
Molasses	22,957.30	15,072.83
Total	1,111,085.19	879,771.49

NEW MANUFACTURING FIRM

TONKAWA, OKLA.—A new manufacturing company for the construction of grain handling equipment and home swimming pools has been formed near here by Delbert McComas, Ike Grapes, Curtis Perry and C. F. Sheets, shareholders in Kay Products Co. The firm's first installation was grain aeration equipment in an elevator at Atchison, Kansas.

When Improving Production ...WHY GO HALF WAY?

WENGER Feed Processing Equipment is engineered for efficiency, lower overall costs and quality feed production.

Years ahead in the molasses feed mixing field, Wenger engineered complete package units are built to replace old fashioned, inefficient, piece-meal installations. You can lower production costs yet turn out better, more uniform molasses feeds by installing Wenger Package Units.

For every feed miller, regardless of size, there's a Wenger Molasses Feed Mixer (capacities of 3 to 30 tons per hr.), and Pellet Mill (capacities of 3 to 7½ tons per hr.). Why go half way? It costs less and you'll make more by GOING ALL THE WAY—with Wenger.

Write for complete cataloging, stating your problem and desired production capacity.

Horizontal Pellet Cooler.
Multi-Duty Pellet Mill produces hard pellets, Wengerblended mash feeds and hi-molasses pellets (optional)
Choose from WENGER'S Complete Line of Modern Equipment.
750 Series Molasses Feed Mixer. Also available in Fat Mixer Model.
100 Series Liquid Proportioning Feeder for Fats, Molasses, Fish Solubles, etc.
Feed Finisher and Dresser.
W-4-70 Molasses Feed Mixer for installation over driveways for molassizing bulk feeds.
Molasses Storage Tank Pump.
Inclined Auger Feeder makes an economical means for small mill to get into bulk feeds.
600 Series Inclined Auger Feeder Molasses Mixer.
50 Series Metered Flow Pump.

Wenger Mixer Manufacturing
SABETHA, KANSAS · PHONE 111

Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

NELLIS
FEED COMPANY
Brokers
of Feed Ingredients
4010 Board of Trade Bldg.
WAbash 2-7322
TWX 623
Chicago 4, Ill.

BUTLER

POLLYPHOS OFFERS YOU...

a minimum phosphorus content of 19%

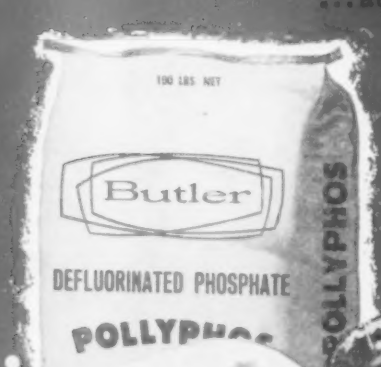
Butler Chemical Company offers feed and mineral manufacturers a high quality defluorinated phosphate with a phosphorus content of 19% . . . a minimum 32% — maximum 35% calcium content and no more than .19% fluorine.

proven high quality

POLLYPHOS has been tested for biological availability . . . proven to be a highly available source of phosphorus. The Texture . . . the blending characteristics . . . of POLLYPHOS . . . make this product a most desirable source of phosphorus supplement for . . . use in formulating all types of livestock and poultry feeds.

low delivered cost . . . .

Butler Chemical Company offers you . . . POLLYPHOS . . . at a low delivered cost per unit of phosphorus to feed and mineral manufacturers located in the western half of the United States.



most dependable service

You are assured the fastest, most economical, courteous service possible when ordering BUTLER POLLYPHOS . . . whether in bags, or in bulk, or in truck or carload lots.

Butler
CHEMICAL COMPANY

5817

LOCATED ON THE HOUSTON SHIP CHANNEL

P. O. Box 938 • Phone ORchard 2-7587 • Galena Park, Texas

SALES AGENTS: Warner Brokerage Co., Inc., Minneapolis; Carroll Swanson Sales Co., Des Moines; James P. Sprigg Co., Los Angeles; White Star Concentrates Co., Portland; E. A. Towns Limited, Vancouver 1, B. C.

Hormone Treatment Not Factor in Finish on Beltsvilles, USDA Says

WASHINGTON — Beltsville Small White turkeys apparently do not require hormone treatments to become better finished broilers than broad-breasted large white turkeys implanted with hormones, according to U.S. Department of Agriculture poultry scientists.

This is shown by results of a study in which synthetic female hormones were injected or given orally to compare their effects on finish for marketing as broilers, feed conversion and weight gain of the large and small turkey varieties. The two hormones used were dienestrol diacetate and diethylstilbestrol administered with methimazole.

The tests were conducted by James J. Miner, Stanley J. Marsden and Charles A. Denton of USDA's Agricultural Research Service at Beltsville, Md.

They studied four pens of each turkey variety. Each of these eight pens contained 20 males and 20 females, a total of 320 birds.

Two pens of test birds (one of each variety) were fed dienestrol diacetate at the rate of 31.75 mg. per pound of feed during the last three weeks of the growing period. Hormones were given the second two groups of test birds in the form of a paste injection of 10 mg. of diethylstilbestrol and 3 mg. of methimazole per bird. The third test group of two varieties received a diet containing 8% added fat. The fourth (control) group of two varieties received no treatment but was given the basic 28%-protein diet fed to all groups throughout the test.

The three-week hormone treatments began when the broad-breasted birds were 10 weeks old, and when the Beltsville Whites were 13 weeks old.

Results of the tests were determined at the usual slaughter age for the varieties—13 weeks for the large broad-breasted white broilers and 16 weeks for Beltsville Small White broilers.

Finish of the treated and untreated small-type Beltsville birds at 16 weeks was Grade A—significantly better than that of the large-type broad-breasted birds at 13 weeks. However, the improvement in finish brought about by the hormones was comparatively greater for this variety than for the Beltsville Small White turkeys. Finish of the Beltsville White turkeys on the added-fat diet was slightly better than that of the untreated controls.

Feed conversion of the hormone-treated birds of both varieties was not as good as that of the untreated birds of each variety. The added fat diet resulted in considerably improved feed conversion for both varieties.

Addition of fat to the diet of the large variety greatly increased final weight, but had no appreciable effect on the final weight of the smaller variety.

Test Pigs Gain Best on Complete Mixed Ration

COLUMBIA, MO.—Slightly faster daily gains were registered for pigs receiving a complete mixed ration of corn and protein supplement, reports Leland Tribble, University of Missouri swine specialist.

Pigs in another test group were fed corn and supplement free choice.

However, Mr. Tribble said, the pigs in the second group had a slightly better feed efficiency and a slightly lower cost of gain.

Purpose of the trial was to compare protein supplements when fed to growing and fattening pigs on concrete free choice or as part of a complete ration.

Best daily gain made by the eight lots of pigs used in the trial was made by a pen getting a complete mixed ration of corn and supplemented with soybean oil meal, tankage, fish meal, wheat shorts, cottonseed meal, linseed meal, alfalfa meal, and minerals and antibiotics.

The top-gaining lot needed 383 lb. to make 100 lb. gain, Mr. Tribble notes. Feed cost of the cwt. gain was $11.27 which included grinding costs.

Most efficient and cheapest gaining lot in the group was one that received the same ration fed free choice. The 10 pigs in the lot needed only 335 lb. of feed to make 100 lb. gain at a feed cost of $9.60.

The pigs, 80 head of Durocs and Hampshires from University pure-bred herds, were started on the test early in June when 10 weeks old and when they weighed 55 lb. The pigs were self fed on a concrete feeding floor and water was available at all times.

Join California Group

SAN FRANCISCO — Nine firms joined the California Hay, Grain and Feed Dealers Assn. recently, reported Terry Coonan, president. The firms and their representatives are: Amburgo Co., Philadelphia, Samuel M. Golden; Brookhurst Mill, Anaheim, Cal., E. F. Zimmer; Feather Rivers Mill, Inc., Yuba City, Cal., J. Steventon; Kearns Grain and Seed Co., Inc., Amarillo, Texas, R. L. Yeager; Kraft Foods Co., San Francisco, J. W. Goodwin; Rice Growers Assn. of California, Sacramento, Richard Micus; Southwest Commodities Corp., Newport Beach, Cal., Richard Webster; Alfred J. Spizzy, Brawley, Cal., Alfred J. Spizzy; and Western Livestock Minerals, Artesia, Cal., H. E. Tedlock.

NOW FROM KRAFT!

In years past, farmers, poultry growers and dairymen have bought millions of pounds of Consolidated's milk by-product feeds. They kept on buying them, because they got excellent results. And that repeat buying made *good business for feed dealers.*

Now there's been a business union between Consolidated and Kraft. This is a natural. For who has more know-how about milk and its by-products than KRAFT?

All these popular, proven and profitable feeds—KAFF-A products, PEX products—are now made by Kraft. And backed by Kraft's famous reputation—for turning out top-quality products that live up to the claims made for them.

Kraft's size and widespread plant facilities make for

COLUMBIA SOFT PHOSPHATE
IMMEDIATE DELIVERY
LOW COST
WRITE FOR INFORMATION
Columbia Phosphate Co.
COLUMBIA PHOSPHATE CO. PHOSPHATE PRODUCTS

More and More . . . Feed Mills Are using —More and More— Stabilized ANIMAL FATS and MEAT PROTEINS
Find Out Why . . . WRITE
NATIONAL RENDERERS ASSOCIATION
Organized in 1933
30 N. LA SALLE ST.
CHICAGO 2, ILL.
Phone FR 2-3289

PROFITABLE IDEAS
FOR DEALERS IN THE CASH REGISTER

Purdue Specialist Speaks at Event for Michigan Cattlemen

KALAMAZOO, MICH.—Some 200 southwestern Michigan cattle feeders recently heard a talk by Dr. T. W. Perry, beef feeding specialist from Purdue University.

The address, delivered at Little Brothers' eighth annual cattle feeders dinner, covered such topics as feed additives, hormones, antibiotics, self-feeding, pelleting, tranquilizers and how to reduce production costs.

"With the high cost of feeder stock, farmers must get their margin by cutting the cost of feeders per pound. Many will find themselves working on a negative margin," said Dr. Perry, "for instance, buying at 32¢ lb. and selling at 28¢ lb."

Speaking of an experiment at Purdue, Dr. Perry said that he and Dr. W. M. Beeson, also of Purdue, have found that calves fed a mixed supplement instead of oil meal consistently gain ¾ lb. more per day. The difference is thought to be in balancing nutrients from corn and silage, since oil meal has a higher protein content.

On hormones, Dr. Perry discussed the practice of implanting range calves at branding time. "You're going to pay for about 20 lb. more meat and bone, but not fat, because stilbestrol stimulates gain, not fat. The feedlot operator can still stimulate a 15% boost in gains by either feeding hormones or using additional implants," he said.

The speaker declared spectacular results from hormones have obscured antibiotics, which came into use about the same time, but said he believes it is possible to upgrade carcasses about a third of a grade with antibiotics, particularly on cattle fed hormones. "Antibiotics will increase finish, improve hair coat and generally smooth out the animal," he said. "They are particularly valuable in feeding cattle to the top grades."

Dr. Perry commented that self-feeding removes some hazards of digestive upsets and reduces labor. Drs. Perry and Beeson have achieved good results by mixing supplement with ground ear corn at the rate of 8 lb. ground ear corn to 1 lb. of supplement.

Dr. Perry continued, "Because of increased automation in feed lots, pelleted feed may be the coming thing, mainly because it is adapted to machine handling. With a high concentrate ration, pelleted feed requires less feed per pound of gain, but the rate of gain is not much faster. The best results with pelleting come with a high roughage ration, where it does speed rate of gain."

The speaker said tranquilizers are likely to have a place in beef feeding "under certain conditions," but are still in the experimental stage.

MOVE TO NEW OFFICE

LEIGHTON, IOWA — Office personnel at the Brummel Bros. feed mill here have moved into their new quarters in the building which formerly housed the post office.

Winners of Cyanamid Purebred Stock Named

KANSAS CITY — Twenty-one 4-H and FFA members from four midwest states earned valuable additions to their cattle, swine and sheep herds at the 60th annual American Royal Livestock Show held recently at Kansas City. The prize purebred animals were presented by American Cyanamid Co. to FFA and 4-H club members showing champions in the junior classes for breeding heifers, market hogs and fat lambs.

The Cyanamid award program, instituted three years ago, provides a purebred heifer, gilt or yearling ewe to the showman exhibiting the champion in each of 21 4-H and FFA junior classes.

Iowa youths took two of the three cattle classes and Oklahoma swine and sheep producers won 17 of the 18 first place ribbons in these classes.

Tyrone Hullinger, Manly, Iowa, won top honors in the junior heifer class for Angus cattle and Don Miller, Dysart, Iowa, showed the champion junior Hereford heifer. Maryjane Holz, Columbia, Mo., topped the Shorthorn class. A heavyweight Poland China barrow entered by Waynilda Stone, Jones, Okla., was judged grand champion of the junior market hog show after taking first in the 4-H Poland China class. Another Poland China barrow exhibited by Wayne Fish, Helena, Okla., topped the FFA Poland China class and followed by earning honors as FFA champion and reserve champion of the junior division. The champion fat lamb was a Southdown entered by Richard Eberspacher, Beaver Crossing, Neb.

Cargill Buys Elevator Near Memphis Plant

MINNEAPOLIS — Cargill, Inc., Minneapolis grain handling firm, has announced the purchase of a country grain elevator at Harrisburg, Ark., 55 miles northwest of Memphis.

A company announcement said the 44,000-bu. installation will receive grain by truck from area farms and will forward it by rail. Located in a soybean-producing area, the elevator will be in use immediately to originate new-crop beans for the company's oil and meal processing plant in Memphis.

M. D. Wyard, grain division official with Cargill, said Ronald D. Stone, who has been with Cargill at terminal elevators in Minneapolis and Port Cargill, Minn., will be superintendent at Harrisburg.

ALL THESE POPULAR PRODUCTS OFFER BIG PROFITS FOR YOU

economical manufacturing and efficient distribution. One result is that the price of new improved KAFF-A has been reduced nearly ⅓ below its price of two years ago. The price of PEX has also been lowered.

POWERFUL ADVERTISING featuring reports by Lloyd Burlingham, famous farm newscaster, will appear in leading farm magazines through the peak demand season this fall.

It can mean "money in the bank" to handle and push these items. Contact the local Kraft Branch, or write to:

AGRICULTURAL DEPARTMENT
KRAFT FOODS
DIV. OF NATIONAL DAIRY PRODUCTS CORP.
CHICAGO, ILLINOIS

YOU CAN CUT
THE HIGH COST OF HANDLING FEED
With a Low Cost SEEDBURO Portable Bulk Scale

Model 460-S
Price $295.00

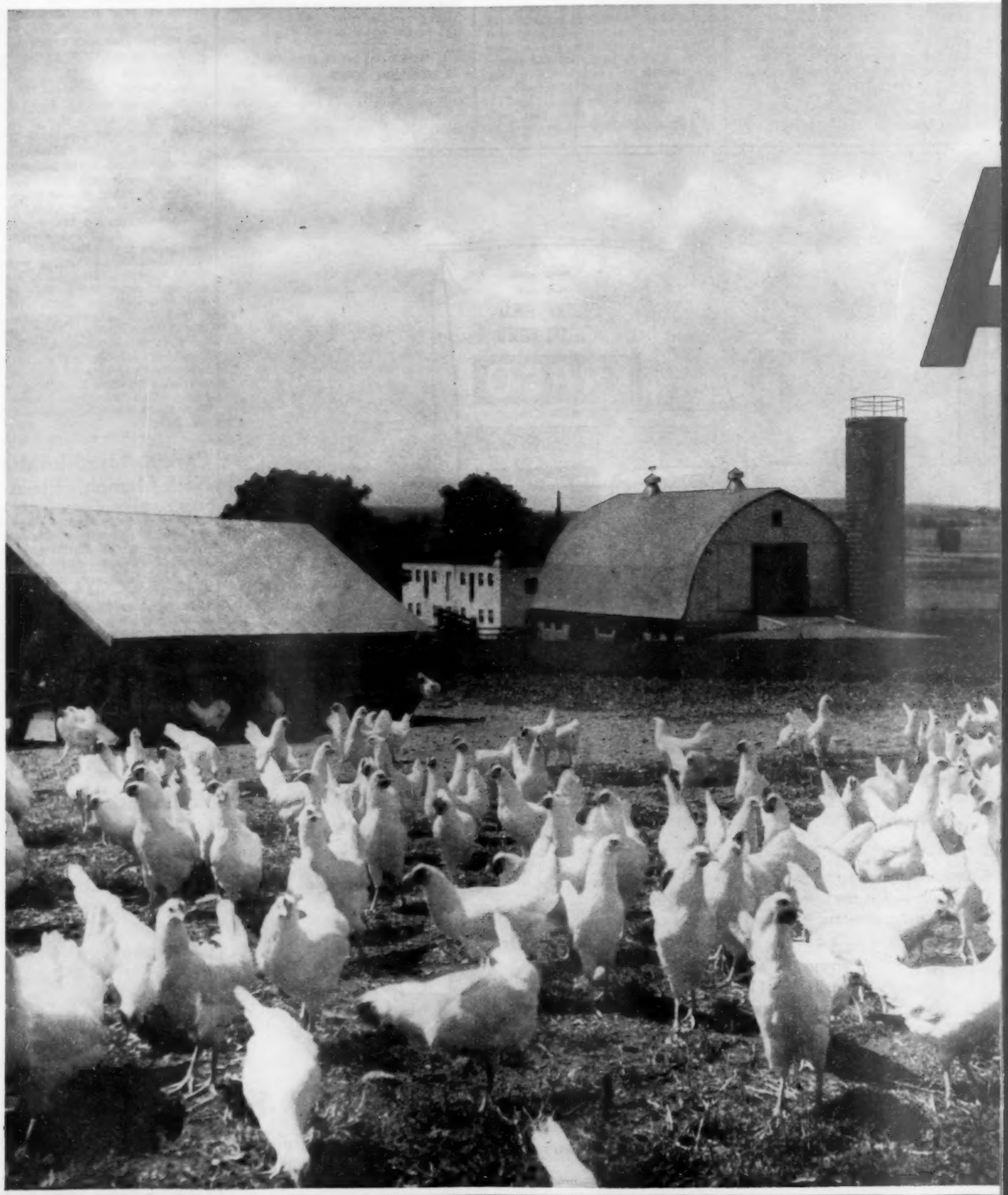
Built-in scale saves time and money. Simply fill bulk scale, weigh the entire lot of material, move it where you want it, pull dump handle and discharge into your hopper.

Swivel casters and rubber wheels make it easy to move full loads. Capacity depends on material being handled. Shelled corn 800 lbs.

Write Dept. FS-11 for further information
SEEDBURO EQUIPMENT CO.
618 W. Jackson Blvd. ● Chicago 6, Ill.

CYANAMID

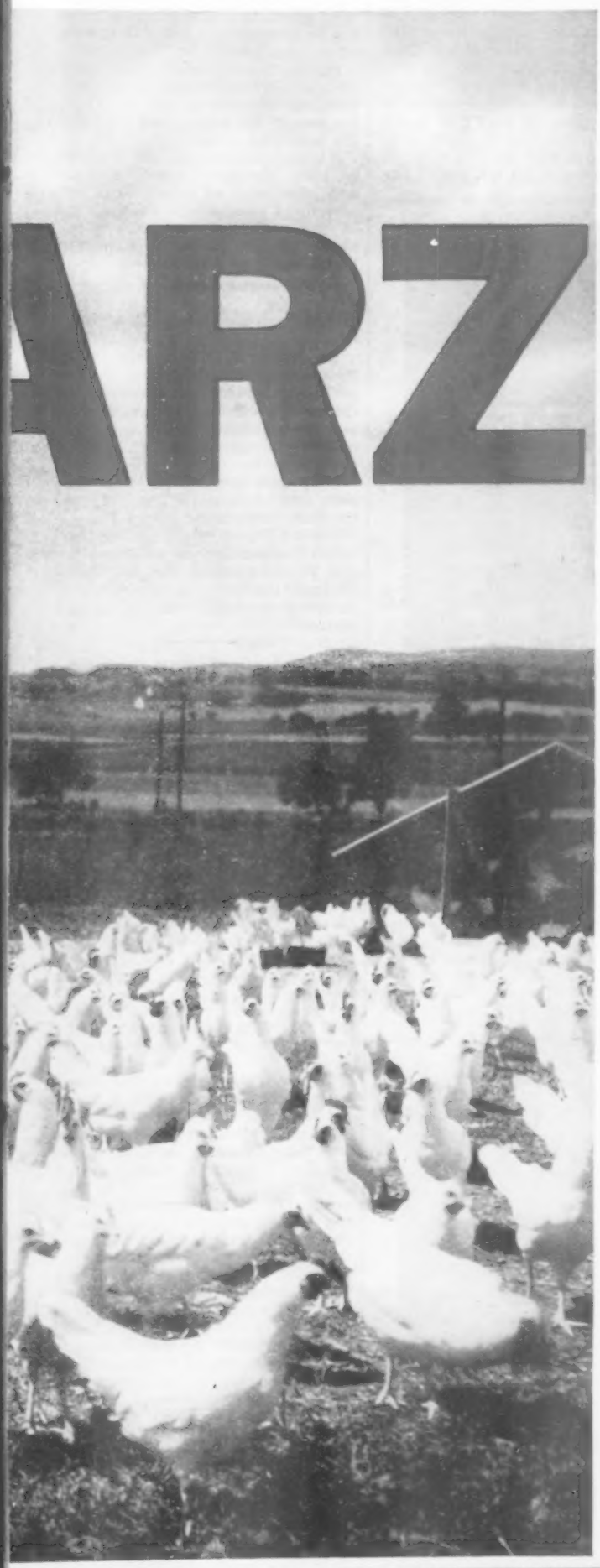
The new coccidiostat for



ANIMAL FEED DEPARTMENT • AGRICULTURAL DIVISION

continuous feeding to laying hens

ARZENE*



Poultrymen in certain areas where laying-house coccidiosis is a problem know how costly this disease can be. They have long wanted a coccidiostat that *could be fed continuously* as an aid in the prevention of coccidiosis.

Now . . . you can serve these customers. You can incorporate ARZENE. ARZENE has been tested in laboratory and field trials with 5,000,000 replacement birds.

ARZENE is, in fact, a multi-purpose coccidiostat. It is effective in preventing coccidiosis not only in layers but also in broilers and replacement chicks.

In addition, ARZENE promotes feed efficiency in replacement flocks and broilers . . . improves growth and pigmentation in broilers . . . satisfies the need for an arsenical.

* * *

ARZENE comes to you at a cost *lower* than that of any other coccidiostat. Write for detailed information on ARZENE or talk to your Cyanamid field representative.

ARZENE
IN FEED

*ARZENE is American Cyanamid Company's trademark for arsenosobenzene.

• AMERICAN CYANAMID COMPANY • NEW YORK 20, N. Y.

Changes in Poultry Housing Discussed at New Jersey Meeting

NEW BRUNSWICK, N.J.—Providing a favorable environment for poultry in the face of New Jersey's weather extremes may be the key to the future of the state's poultry industry, according to Dr. Robert L. Squibb, chairman of the department of poultry science at Rutgers University.

Speaking at the Institute in Poultry Housing recently at the state university, Dr. Squibb indicated that developments in housing and knowledge of the physiological and other needs of the chicken will be the major factors in keeping New Jersey's egg business in competition with the South and West where weather is less of a problem in production costs.

He also mentioned that the New Jersey poultryman's investment in buildings is tied to land subjected to increasing tax costs, while "poultrymen in the West are defending themselves against high taxes by zoning themselves into 'chicken cities.'"

Much of the talk at the meeting was about the Rutgers experimental cold solar house and related projects designed to put housing on a sound scientific foundation, and do away with the "hit-or-miss" methods by which many poultrymen have tried to work out on an individual basis the problems of providing favorable working conditions for layers.

Prof. Charles H. Reed, agricultural engineer at Rutgers, who has been working closely with the University's poultry scientists in developing the experimental house, showed with models how the sun's heat keeps litter dry in spite of overcrowding. He emphasized that the construction was a cold house, that last winter, with a temperature of zero outside, the temperature inside the house was 20 degrees. In summer it was sometimes a degree or two cooler inside the house than outside.

The engineer described the new house as "just a skin" of homosote or plywood over a wood frame. He estimated the cost of materials at about 65-70¢ a square foot.

Another speaker, W. C. Krueger, extension farm engineer, suggested for the future a windowless laying house, with insulated sidewalls, slatted floor and positive, high-powered ventilation.

"Lights in the house of the future might be turned on at night while the poultryman is asleep. He would take care of eggs and do other necessary jobs during the day. Egg collecting and cooling would be automatic, as would feeding, watering and litter removal," Mr. Krueger said. He also mentioned that he could see possibilities in 12-bird laying cages instead of individual cages. He said that in his opinion a slatted floor is much to be preferred to a wire floor in a raised floor management system, and in any case, mechanical cleaning is a necessity.

Dr. Harold S. Weiss, physiologist, discussed housing in terms of what is known about the tolerances of chickens to extremes of temperature and the ability of poultry to accommodate themselves to climatic changes.

More than 60 attended the conference, which was held at the new poultry farm research laboratory.

The next conference, dealing with poultry marketing, is scheduled for Jan. 21; the third, on diseases, March 25, and another one, on nutrition, sometime in April (date to be announced).

"BRAND" NEW IDEA FOILS GRAIN RUSTLERS

ABERDEEN, S.D.—A plan to stop grain thieves by branding farm stored grain, which was put into operation in Roosevelt County, Mont., has also been started in North Dakota, reported the Farmers Elevator Assn. of South Dakota.

About 100 growers are participating in the Montana program, the association says, which consists of mixing small confetti-like pieces of numbered paper, either throughout the bin as it is filled, or scattered on top and worked into the surface layer of grain. In this way, stolen grain can be recognized and identified when offered for sale.

In the North Dakota plan, each piece of confetti contains three numbers; the first designates the state, the second the county and the third the individual grower.

Number assignments are released to local elevators, county sheriffs and secretaries of county crop improvement associations. One package of the numbered confetti contains about 250,000 pieces, sufficient to brand 50,000 or more bushels.

Wisconsin Cooperative Opposes 'Unionization'

FOND DU LAC, WIS.—Milk prices and "unionization of farmers by labor unions" were under fire by the Pure Milk Producers Cooperative at its convention here recently.

A resolution passed by the group calls for congressional investigation of the spread between the price charged consumers for dairy products and the price paid to farmers. Presented by the board of the cooperative, the resolution said "such an investigation should try to determine whether monopolistic pricing is used by the processing and distributing industry."

Figures were produced to show that a quart of fresh milk which sells for 21¢ brings the farmer a return of 9¢.

The convention also went on record as opposing "unionization" of farmers by labor unions. Paul Affeldt, Sparta, president, said efforts have been made by unions in Michigan and the East to organize farmers.

"We don't oppose unions as bargaining agents for industrial workers, but we feel that organizations like ours should represent the farmers," Mr. Affeldt declared.

Another resolution which passed despite some opposition was one favoring milk marketing controls. Some delegates argued that assignment of across-the-board production quotas to all farmers would handicap young farmers by limiting their production. The resolution said control should be imposed if favored by a two thirds vote of all dairy farmers.

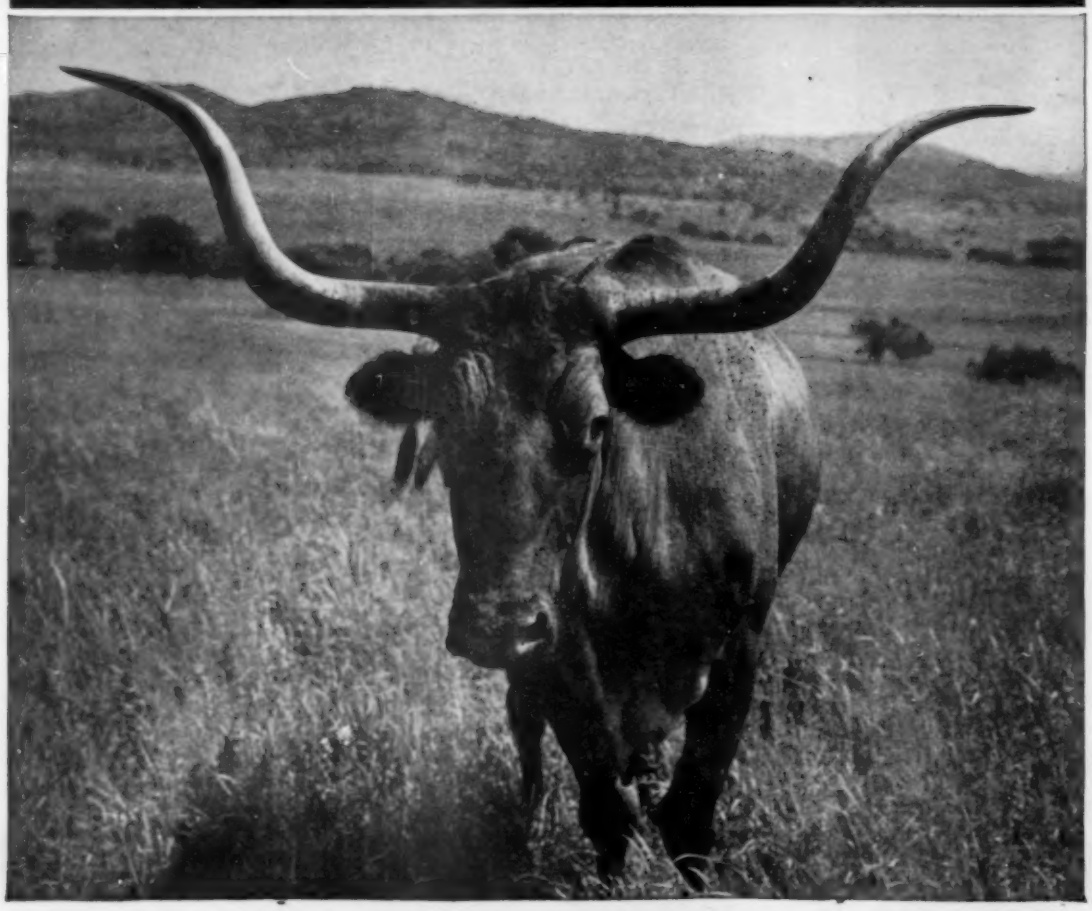
FEED MAN DIES

BUCYRUS, OHIO—Walter J. Kerr, 69, a retired farmer and former president of the Zeigler Milling Co. here, died recently in Community Hospital. He had served also as a director of the mill. Surviving are his widow, two daughters, a son and a sister.

REACH FOR THE SCHENLEY CORN DISTILLERS DRIED GRAINS, PARDNER!

I wish my folks had known about Schenley Farm Feed Products. I am an almost extinct longhorn steer in the Wichita Mountains. My advice to other animals who do not want to share my fate: Use SCHENLEY CORN DISTILLERS DRIED GRAINS. They are specially processed to retain all nutritional values, are palatable to the animal, are an established ingredient in dairy feeding, are fairly and realistically priced.

Schenley Distillers Inc.
FARM FEED DIVISION
26 East Sixth Street
Cincinnati 2, Ohio
Telephone MAin 1-3170



ATTEND MEETING—Poultry scientists engaged in turkey research met recently at Colorado State University to plan future work in the western states. Above, Robert E. Moreng of CSU points out features of the new CSU turkey pole house for David Carson, Utah State University; Marlow W. Olsen, U.S. Department of Agriculture, Beltsville, Md.; V. S. Asmundson, University of California; Steven King, USDA, Lafayette, Ind., and Igor Kosin, Washington State College.

Poultry Researchers To Study Reproductive Problems in Turkeys

FORT COLLINS, COLO.—Western poultry research scientists will cooperate in a study of reproductive problems in turkeys, it was announced.

Final details were worked out at a recent meeting of the regional research committee at Colorado State University. In the study, the scientists will investigate both genetic and environmental factors affecting reproduction in turkeys.

Attending the meeting at CSU were 10 poultry researchers representing five western experiment stations and the U.S. Department of Agriculture.

Breeding for improvement of turkeys was another topic of discussion. Purpose of this regional project is to study infertility and low hatchability in turkeys.

In the past few years a number of recommendations based on western regional research have been made to correct infertility and low hatchability. The poultrymen decided more research is needed to clarify many of the procedures and to answer inquiries from the poultry industry.

Marlow W. Olsen, USDA poultryman from Beltsville, Md., told of his work on parthenogenic development of turkeys. He explained some of his recent findings concerning the cause and possible mechanism of this phenomena in Beltsville white turkeys.

Others present at the two-day session were V. S. Asmundson, University of California, Davis; David Carson, Utah State University, Logan; James A. Harper, Oregon State College, Corvallis; Dan Huffo, University of Wyoming, Laramie; Steve King, USDA regional poultry breeding laboratory, Lafayette, Ind.; Igor Kosin, Washington State College, Pullman; Robert E. Moreng, Colorado State University, Fort Collins; Director L. W. Rasmussen, Washington State College; and William Shaklee, Office of Experiment Stations, USDA, Washington.

Sales Agent Named For Iron Carbonate

NEWFIELD, N.J. — Appointment of the Gladwin A. Read Co., Evanston, Ill., as exclusive sales agent for feed grade iron carbonate in the Central West has been announced by Stanley W. Madsen, vice president of sales, Shieldalloy Corp., a division of Metallurg, Inc., Newfield, N.J.

A processor of rare earths and exotic alloys, the company also processes ferrous carbonate, a source of iron in mineral feeds and trace mineral pre-mixes, particularly for swine.

"Iron carbonate is always free flowing, and nutritionists tell us that the biological availability is unexcelled," Mr. Madsen said. "This means that 20 parts per million of iron, in the carbonate form, will insure 20 ppm into the animal's system."

Promotion Planned For Duck Industry

CHICAGO—A consumer education program for ducks and ducklings was planned at a meeting attended here recently by representatives of 70% of the nation's duck industry.

The Poultry & Egg National Board met with 18 duck industry leaders from major production regions of the nation to lay the groundwork for the program. Approved by the duck industry members was a PENB-proposed program aimed at homemakers, institutions and restaurants and the food industry. The tentative budget for the first annual promotion was $60,000, with more than half of the amount on deposit in escrow prior to launching the promotional activities.

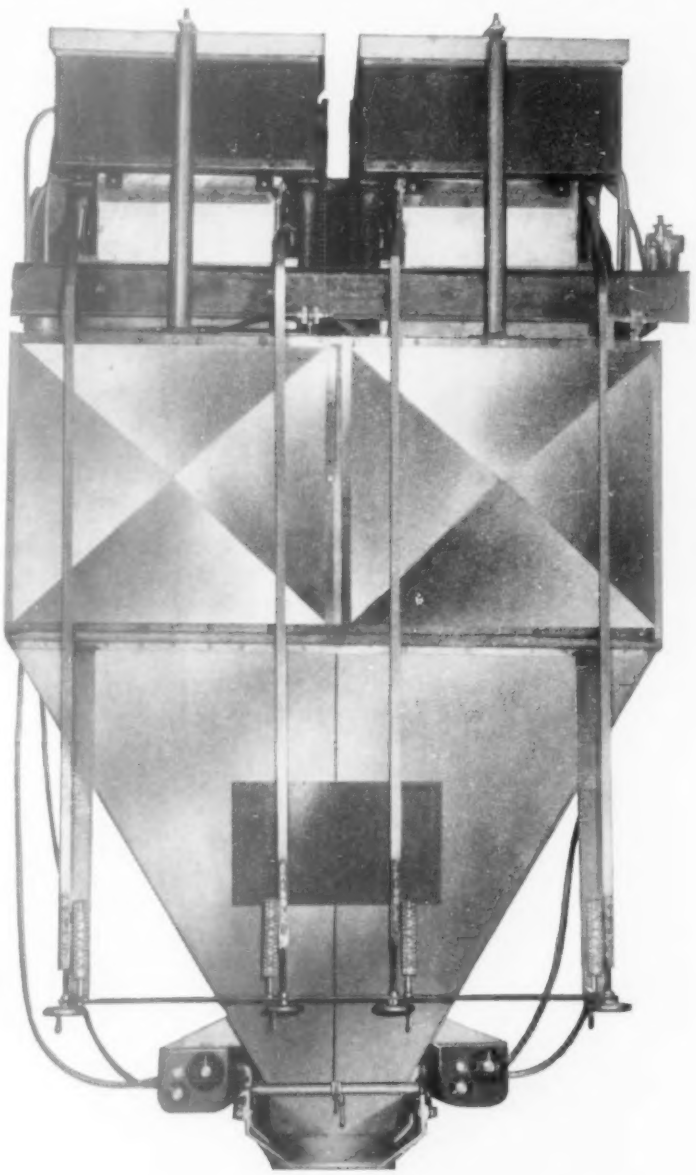
It was agreed that funds should be collected at the processor level at a suggested rate of 1¢ per duck. Hatcheries, growers and processors would all participate in the investment plan. Allied industry investments would be made direct to PENB. The investment program will be initiated immediately.

FIRE DESTROYS ELEVATOR

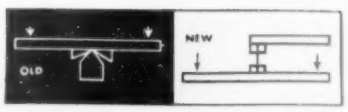
JETMORE, KANSAS — An elevator and 18 000 bu. of wheat owned by the Southwest Grain Co. here were destroyed by fire recently. An overheated conveying belt was blamed.

25 to 30 BAGS per min.

NEW THAYER SCALE for feed mills provides pin-point accuracy at extreme speeds. Newly designed scales fill one hopper as the other is being discharged into the bag. Unique double bulk and dribble feeders easily maintain 25 to 30 dumps per minute with unvarying accuracy. Accommodates 25 to 100 lb. bags. A control panel gives the operator a continual view of the scale's operation. Scale quickly pays for itself in labor and feed savings.



GUARANTEED: Thayer Plate Leverage System eliminates knife-edge pivots, is not affected by dust, dirt, shock or vibration. Guaranteed accurate for the life of the scale.



WRITE FOR FEED MILL MANUAL containing application information and specifications.

THE Thayer SCALE

*THE THAYER SYSTEM OF PROCESS CONTROL BY WEIGHT

AUTOWEIGHTION

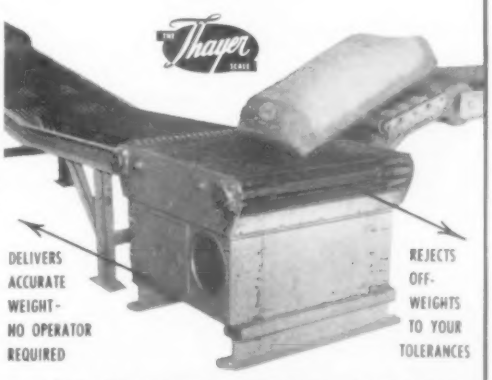
THAYER SCALE CORP., 9 Thayer Park, Pembroke, Mass.

Save $ and troubles . . .

CHECKWEIGH

100% of production

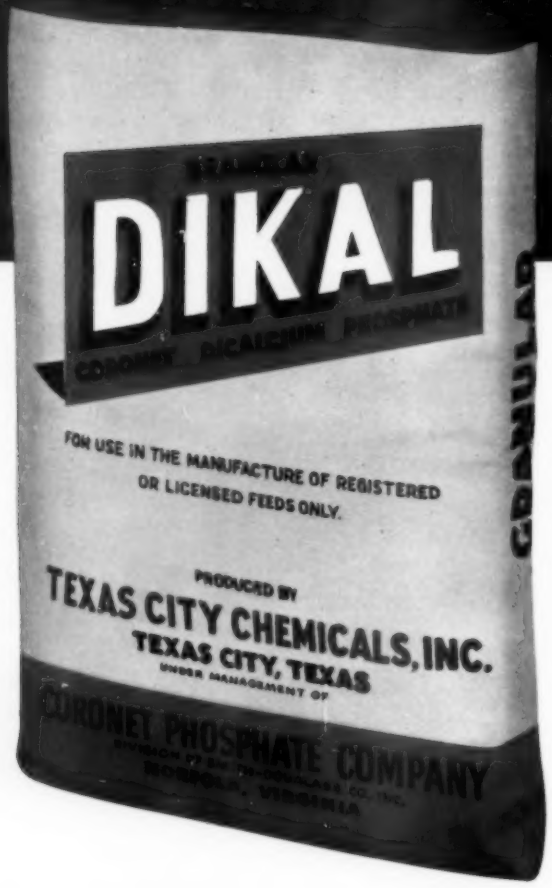
A Thayer Checkweigher in your conveyor system **rejects off-weight packages to your tolerances.** An invaluable inspection tool that never closes its eyes on filling scales or operators. Thayer Plate Leverage System is **guaranteed accurate** for the life of the scale. Send for full information on Checkweighing to Save Feed and Keep Customers.



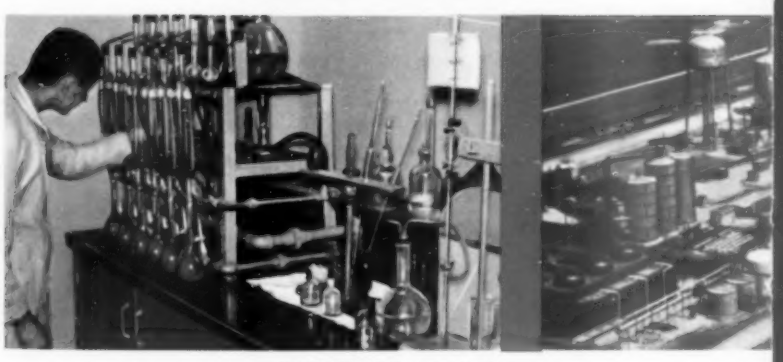
THAYER SCALE CORP.
9 THAYER PARK
PEMBROKE, MASS.

AUTOWEIGHTION

INCREASE GAINS..



RESEARCH



CORONET GRANULAR DIKAL
is backed by 50 years of RESEARCH
which delivers an increasingly
BETTER PRODUCT . . . year after year!

50 CORONET...50 YEARS OF RESEARCH...QUALITY CONTROL...SERVICE

with Higher
Dicalcium Phosphate Levels

FEEDING TRIALS PROVE BENEFITS

Rations supplemented with higher dicalcium phosphate levels produced faster liveweight gains and more efficient feed utilization in a series of cattle feeding tests at State Agricultural Experiment Stations.

IOWA STATE[1]
Tests conducted by Iowa State College researchers indicate cattle receiving higher dicalcium phosphate rations graded higher at slaughter and returned greater margins over feed costs. The Iowa State report concludes . . . in some cases a higher level of total ration phosphorus, possibly as high as 0.3 percent, may well be needed.

PURDUE[2]
According to a study conducted by Purdue University researchers, raising the phosphorus level in a corn-soy ration from 0.30 to 0.45 per cent improved rate of gain 29% and feed efficiency 6.6% when fed to growing swine on ladino pasture. A further increase in phosphorus to 0.60% improved feed efficiency 5.7%, but failed to stimulate gains further.

Several pigs on the corn-soy basal ration exhibited borderline phosphorus deficiency symptoms.

SOUTH CAROLINA[3]
An animal deficient in phosphorus from either hereditary genetic defects, or because of prior consumption of a low phosphorus ration may bloat, regardless of the level of nutrition in the feed crop. Therefore, a critical phosphorus deficiency in ruminants should be corrected through feeding of dicalcium phosphate or other mineral phosphates or by feeding high phosphorus concentrated feeds prior to being placed on luscious legume pastures.

TEXAS[4]
In feeding trials on the King Ranch in Texas, cows fed supplemental phosphorus weaned 39% more calves, averaging 50 pounds more weight per calf. In addition, feed lot operators in the Southwest have discovered that higher phosphorus levels result in faster gains.

USE MORE CORONET GRANULAR DIKAL IN YOUR FEEDS

1. Different Kinds and Amounts of Phosphorus in Fattening Cattle Rations. Agricultural Extension Service A. H. Leaflet 209. Iowa State College. Wise Burroughs, Arthur Raun, Edmund Cheng, C. C. Culbertson.
2. Phosphorus and Protein Levels for Growing-Finishing Swine on Legume Pasture. A. H. 215. Purdue University. C. E. Jordan, J. H. Conrad, M. P. Plumlee, W. M. Beeson.
3. Relation of Phosphorus Deficiency to Acute Bloat in Ruminants. H. P. Cooper, 69th Annual Report South Carolina Agricultural Experiment Station, Clemson, S. C., May, 1957.
4. Methods of Supplying Phosphorus to Range Cattle in South Texas. Texas Agricultural Experiment Station Bulletin 773. E. B. Reynolds, J. M. Jones, H. H. Jones, J. F. Fudge and R. J. Kleberg, Jr.

QUALITY SERVICE DUST-FREE

CORONET GRANULAR DIKAL, produced under meticulous and carefully controlled manufacturing conditions at this modern facility in Texas City, Texas . . . is a highly available source of phosphorus.

CORONET GRANULAR DIKAL assures a constant supply when you want it . . . in any desired quantity. Feed manufacturers enjoy faster, more dependable service from Texas City . . . the ONLY feed grade dicalcium production point west of the Mississippi River.

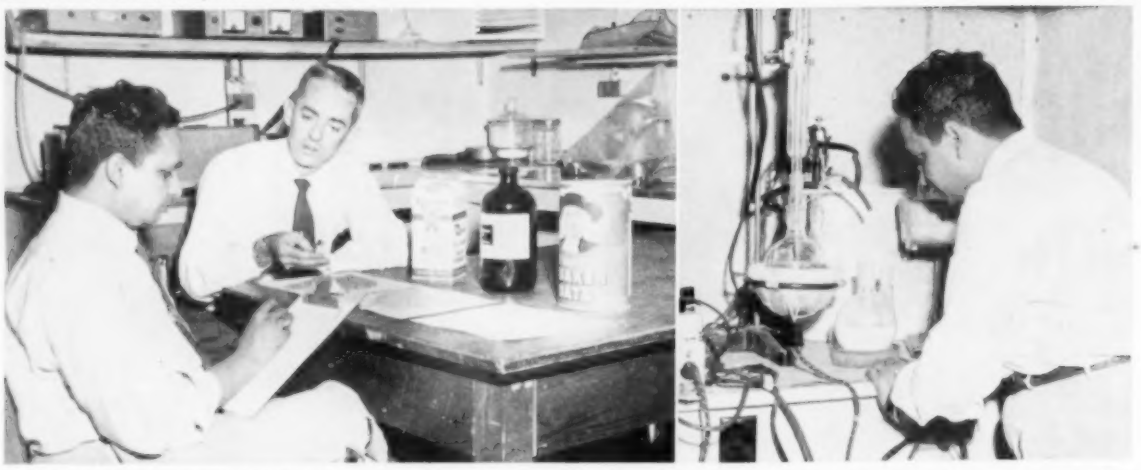
CORONET GRANULAR DIKAL eliminates annoying dust in bagged or bulk shipments. Additionally, Granular Dikal improves dispersion because of similarity in particle size to other feed components.

Let us figure the cost of DIKAL delivered to your plant

DIKAL
CORONET DICALCIUM PHOSPHATE

CORONET PHOSPHATE COMPANY
Norfolk 1, Virginia

A Division of **Smith-Douglass Company**, Incorporated



CHLOROFORM EXPERIMENTS — Lallan Rai (left), and Clifford Roan, Kansas State experimenters, are shown in the left photo discussing their latest findings from tests concerning chloroform as a grain fumigant chemical. One part of their work was to check residues left by the chemical on and in the grain and the grain products. The photo at right shows Mr. Rai completing an experiment in which chloroform was evolved as a gas from wheat cooked in liquid suspension. The chloroform was trapped in acetone in an ice bath and later checked for color density on a Beckman DU spectrophotometer.

Kansas State Reports Fumigation Research With Chloroform

MANHATTAN, KANSAS—A minor revolution in the stored grain fumigation business is coming up, entomologists at Kansas State College here believe.

This is the substitution of chloroform for other chemicals in carbon disulfide fumigation formulations.

Chloroform will be used in an 80-20 ratio with carbon disulfide in the same manner that carbon tetrachloride, for instance, is now used. It is probable that chloroform will permit the use of 25 to 30% carbon disulfide.

Extensive tests by Clifford Roan and Lallan Rai, K-State entomologist, plus field tests in cooperation with the stored products section of the USDA, have shown that chloroform formulations are effective and safe. The Food and Drug Administration recently approved chloroform for use as a grain fumigant.

The idea of using chloroform in fumigants is not new. It was evaluated in the 1920's and found to be good—but was forgotten because chloroform was not competitive in price at that time.

The new formulations are the outgrowth of cooperative research by the Kansas agricultural experiment station and Frontier Chemical Co. of Wichita. The investigations were begun as basic research, but work was switched to extensive investigations into the residue problem. Tests have shown no residues in or on the grain, and there are no residues in milled products of grain which has been fumigated.

Livestock Feed Firm To Transfer Plant

CHICAGO—Blenda Life, Inc., Chicago, feed manufacturing firm which purchased Perfection Dog Food Co., Battle Creek, Mich., in August, is planning to transfer its livestock feed manufacturing operation to Battle Creek from McHenry, Ill., about Jan. 1.

A. P. Cole, Perfection general manager and assistant treasurer, said the change would be made because the Battle Creek plant has better rail facilities than the Illinois location.

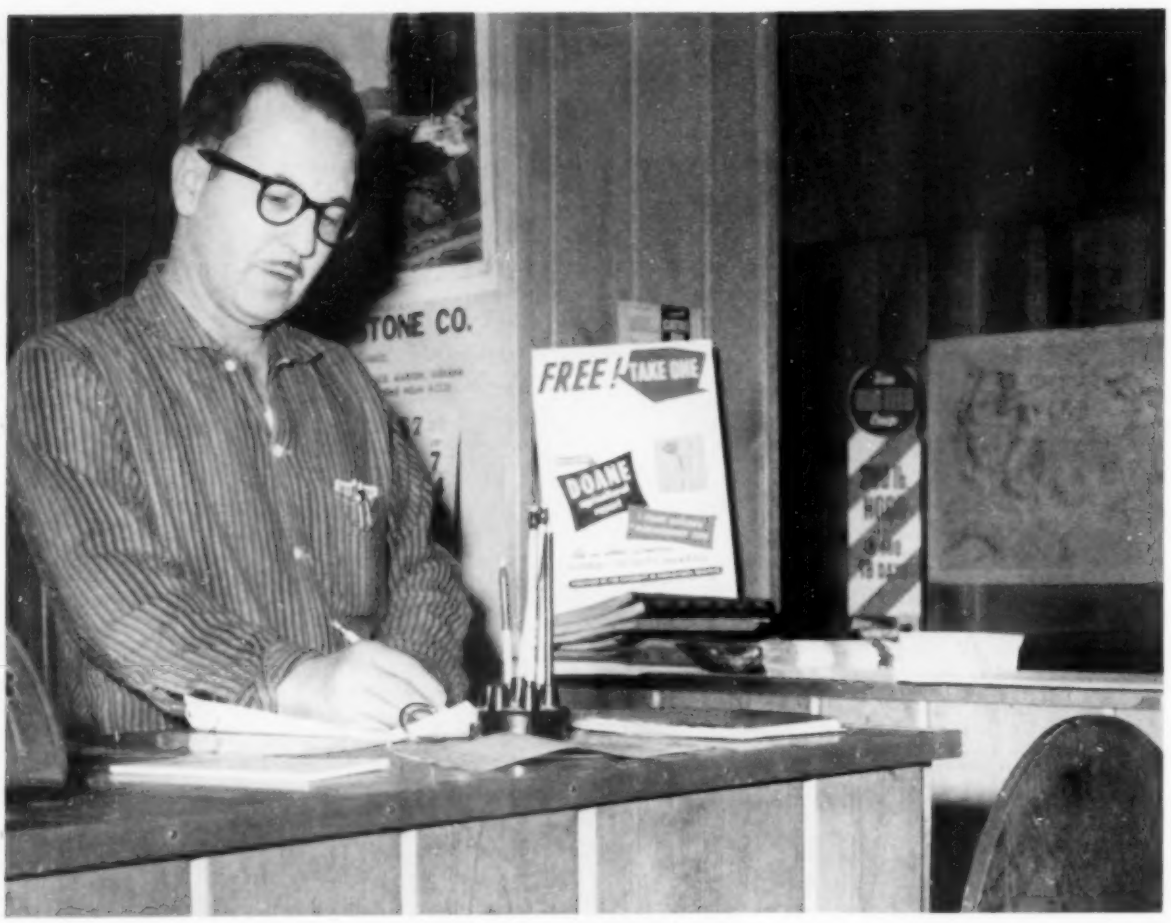
Perfection is now a wholly-owned subsidiary of Blenda Life. It employs eight persons in the manufacture of dog foods. The firm celebrated its 50th anniversary last year. Blenda Life, in existence since 1941, has its main office in Chicago and a plant in Green Isle, Minn.

University of California Gets Research Grants

BERKELEY, CAL. — Two grants of about $10,000 each have been made to the division of agricultural sciences of the University of California to promote studies in the field of animal and poultry nutrition and breeding.

The U.S. Department of Agriculture has given $10,400 for research on the improvement of beef cattle through the application of breeding methods, and the California Turkey Federation has given another $10,000 for research on egg-transmitted diseases.

A grant of $4,100 was given by the U.S. Agricultural Marketing Service for research on measurement of off-flavor eggs, and $3,600 was donated by the Conservation Foundation for a survey of effects of animal control methods on the biotic environment.



Mr. W. R. Aukerman, owner, Amboy Grain Company, Amboy, Indiana

"Farming for Profit"... unique service to your customers

Doane monthly reports help feed dealers serve farmers through last-minute analysis of price trends, latest practices to cut costs and boost income.

More and more feed dealers are using "Farming for Profit" as the nucleus of a service-type public relations program to build their business and to promote sounder agriculture in their communities.

This terse, authoritative, easy-to-read bulletin compresses the thinking of some of our best-informed agricultural brains into money-making, money-saving capsules of information.

Amboy Grain Company, Amboy, Indiana, for example, is a long-time user of "Farming for Profit" as a public relations force. Mr. W. R. Aukerman, owner of Amboy Grain Company, says, "We feel 'Farming for Profit' is doing a good job for us. We get a lot of comments and our customers appreciate getting it."

Let Doane's "Farming for Profit" help build your feed business. Send "Farming for Profit" to your customers and prospects and help them to cut costs and increase their incomes.

Write today and see how little it costs to identify your business with this unique service to farmers.

"Farming for Profit"® is prepared and edited by Doane Agricultural Service, Inc., . . . the oldest and largest organization in the United States engaged in farm management and agricultural research.

DOANE AGRICULTURAL SERVICE, INC.

5142 Delmar Boulevard, St. Louis 8, Missouri

SCROGGINS GRAIN CO.
Phone FE 5-3913 — Teletype: MP 344
WHOLE and GROUND GRAINS and SCREENINGS
MINNEAPOLIS, MINNESOTA

Layer's Temperature Needs in N. M. Tested

STATE COLLEGE, N.M.—It is not necessary to construct poultry houses that will maintain a temperature above 32 degrees F. at all times in southern New Mexico, tests at the New Mexico A&M College Experiment Station indicate.

The experiment is described in a research report, "Housing for Layers in Cages," by Prof. L. N. Berry, formerly head of the poultry husbandry department, now retired.

The report explained that in southern New Mexico, the average minimum temperature during any winter month averages above 20 degrees F. "Under these conditions, the egg production of caged layers, when given protection from winds and drafts but with no attempt to keep the temperature above 32 degrees, compares favorably with the production of birds in houses where the temperature is kept above 40 degrees," according to the report.

Research report 18 may be obtained by writing the Department of Information, Box 757, New Mexico A&M College, State College, N.M., or at county agents' offices.

P/S This Sign of PROMPT SERVICE

Means more than just quick shipment from our Memphis warehouse stocks of leading vitamins, antibiotics, growth factors and minerals. It means Personal Service, too, in helping with formulation, registration and in other ways when our customers need it. Call us.

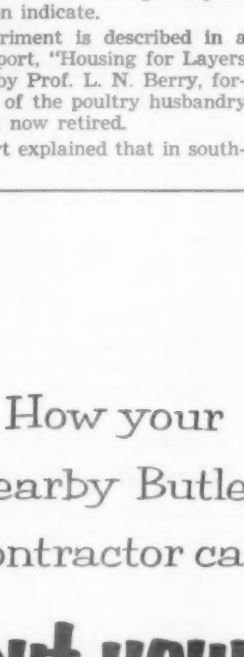
PLESS & SHEAHAN
BOX 2654

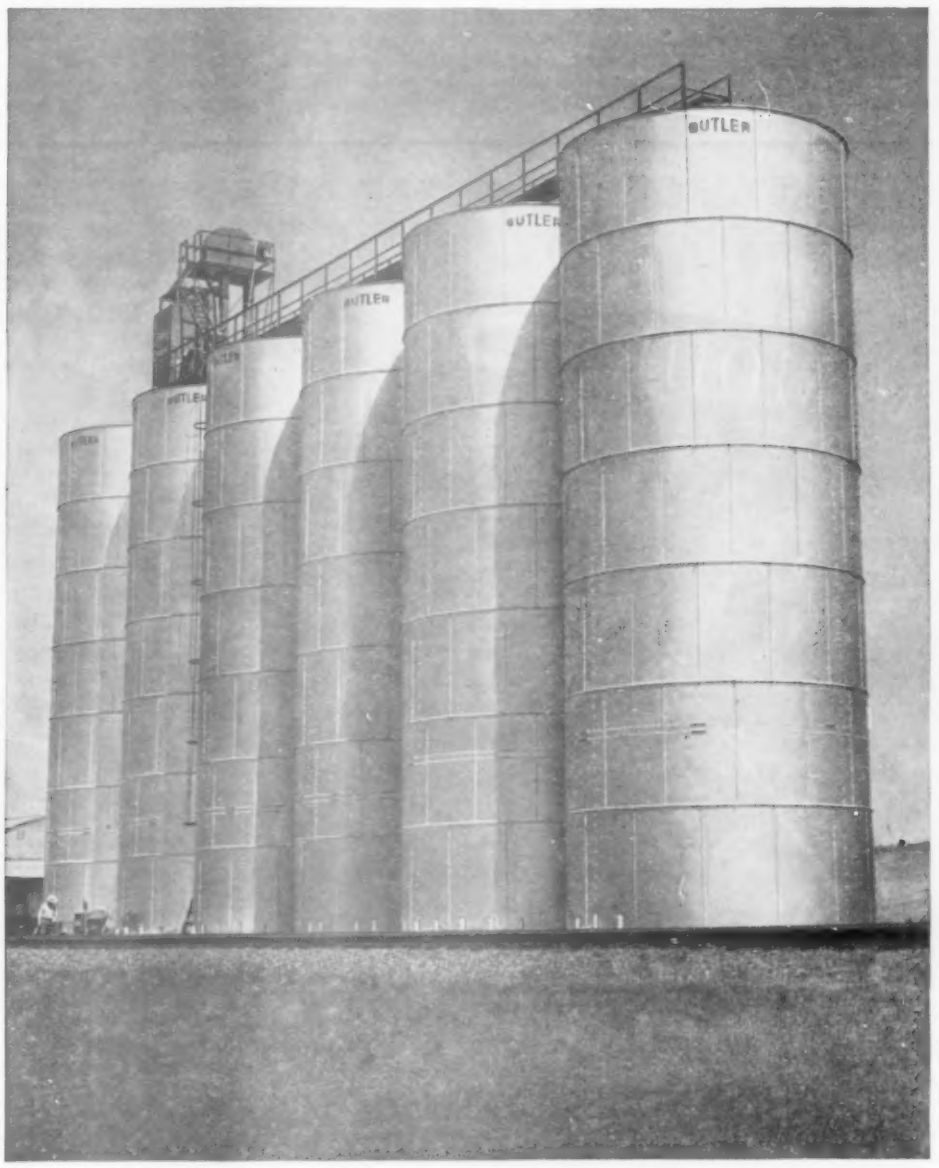
MEMPHIS, TENN.
TELEPHONE—JACKSON 6-6411

How your nearby Butler contractor can

cut your storage costs

with Butler steel tanks





Woodland Mill Supply Company erected this Butler installation for Winema Elevators, Inc., at Henley, Oregon. The six bolted steel tanks provide safe storage for almost 90,000 bu. of barley.

Meet Fred Joost of Woodland Mill Supply Company, Woodland, California. He's typical of Butler contractors all over the country who are local experts in building Butler steel tank storage facilities.

Your Butler contractor knows the special construction problems, infestation problems and weather conditions in your area—and how to solve them with weather-tight, rodent-proof Butler steel tanks. He'll help you get all of the other benefits of Butler steel tanks, too—low initial cost, low insurance rates, minimum maintenance, excellent fire and weather protection, easy cleaning and fumigating. And, of course, Butler's speedy erection.

Butler bolted steel tanks are also widely used for bulk storage of feed and ingredients. Capacities range from 1,297 bushels to 123,364 bushels.

For complete handling of your storage problems by a man who can give you service that cuts costs, contact your nearby Butler contractor, or write to us.

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY
Dept. 402, 1020 East 63rd Street, P. O. 7027, Kansas City 13, Missouri
902 Sixth Avenue, S.E., Minneapolis 14, Minnesota
1012 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 2, South 27th St. and Butler Ave., Richmond 1, California

Manufacturers of Equipment for Farming, Dry Cleaning, Oil Production and Transportation, Outdoor Advertising • Metal Buildings • Custom Fabrication
Factories at Kansas City, Mo. • Minneapolis, Minn. • Galesburg, Ill. • Richmond, Calif. • Birmingham, Ala. • Houston, Texas • Burlington, Ontario, Canada

Examples of Integration Cited

EAST LANSING, MICH. — A description of some current examples of integration is part of a recent report on vertical integration by the agricultural economics department of Michigan State University.

The report, appearing in the MSU publication "Michigan Farm Economics," included an article by Robert C. Kramer and Phillips Foster which indicated that many different types of integrated programs now exist in Michigan.

Feed companies and elevators, it was pointed out, have integration programs with farmers for hogs, eggs, turkeys, broilers, caponettes, ducks and cattle. Livestock market owners have integration programs with farmers for cattle. Hatcheries have programs with producers for eggs. Processors have programs with farmers for poultry. A retail food chain owns a packing plant to obtain meats.

One of the recent poultry integration operations in Michigan involves the elevator business of Richland Farm Services in Kalamazoo County. This firm has formed a corporation that now owns a poultry farm and is contemplating an eventual 14,000-bird flock.

It has arrangements to retail its eggs through a store and a dairy which delivers milk house-to-house. The grocery store and the milk delivery provide a market outlet for the eggs.

Feeder Pig Contracts

One of the swine programs is that of the Ravenna (Mich.) Cooperative Elevator, which is putting out feeder pigs on contract to be fed for market. The elevator provides all the feed, veterinary service, medication and supervision. The farmer provides the housing, equipment and labor. The elevator markets the fat hogs.

The Sunfield Farmers Elevator in Eaton County recently constructed a large farrowing house. It plans to produce pigs for farmers who may contract to feed them out with corn furnished by the farmer and protein supplement furnished by the elevator.

Beef Feeding Plans

The Lacerne Dixon Farm in Jackson County has an integrated program with steers. Farmers are offered two alternative arrangements.

Under one plan, Dixon furnishes the feed and cattle and pays the farmer 5¢ per head per day for the use of his barn and labor. The farmer keeps the manure and, at the end of the feeding period, Dixon takes back the cattle.

Under the other plan, the farmer again furnishes the barn and labor, and Dixon furnishes the cattle. This time, the feed costs are shared on a 50-50 basis. At the end of the feeding period, the value added to the cattle is split 50-50. The cattle are bought and sold on an auction market as a fair way to set their value. Dixon guarantees that the farmer will not have to sustain a loss in the deal.

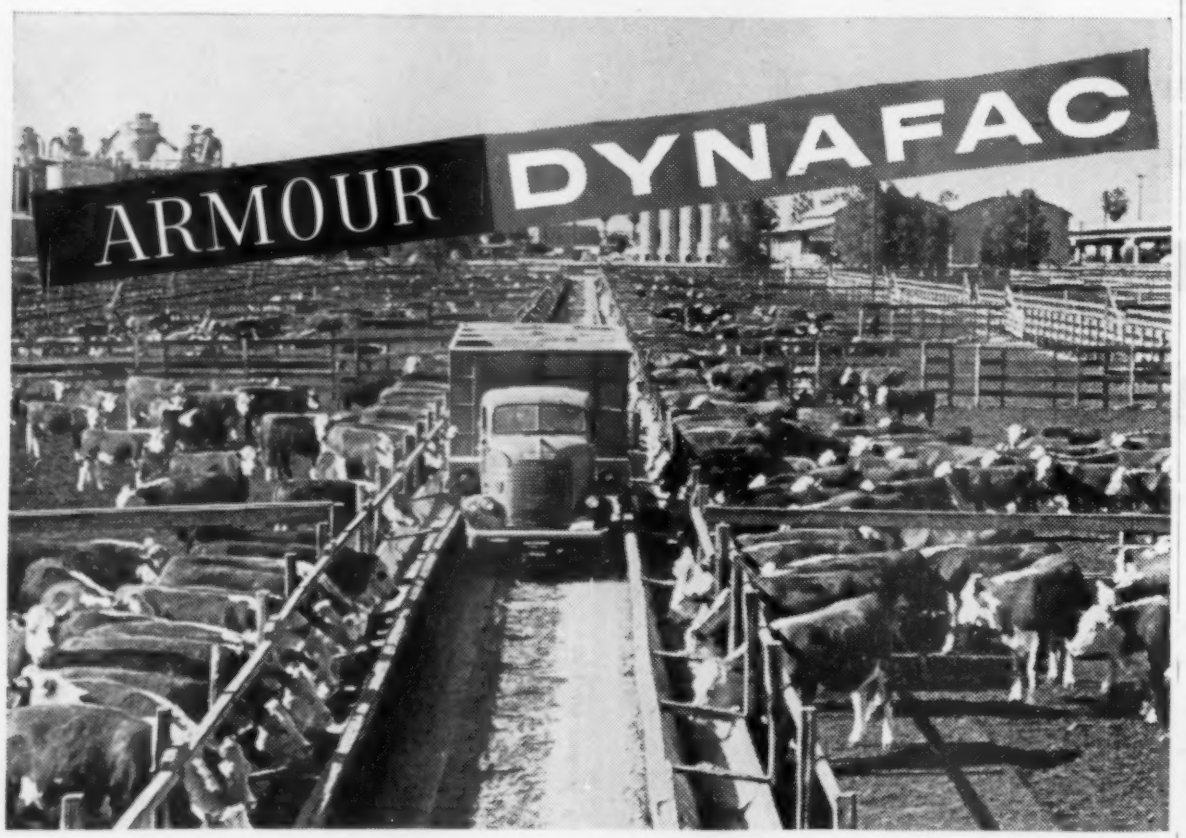
Perhaps, said the Michigan economists, one of the most spectacular examples of vertical integration to come to Michigan recently is the beef production program which Warren Huff of Washtenaw County is getting under way. Mr. Huff is producing his own feeder calves on a 5,000-acre ranch in northern Michigan. The calves produced will be taken to his finishing lots near Ann Arbor. There an ample supply of feed from Mr. Huff's Washtenaw County farm will await them. Each year he produces 4,000 tons of silage and 25,000 bu. of corn.

It is clear, said the economists, that instances of integration are increasing in number.

Triple-Duty Cattle Vaccine Developed

TORONTO, ONTARIO—A preliminary report on a new vaccine for immunizing cattle against leptospirosis, virus diarrhea and infectious bovine rhinotracheitis has been issued by the Veterinary Virus Research Institute in New York, according to the Ontario Department of Agriculture. "The fact that a triple vaccine has been developed and can be given in one inoculation resulting in both successful immunization and safety is an important step forward in the control of animal diseases," the department of agriculture announcement declared. "Triple vaccines have been used in human medicine for some time, but this is the first report of their use in the immunization of cattle."

The announcement said infectious bovine rhinotracheitis is not common in Ontario, but leptospirosis and virus diarrhea are assuming an increasing importance in the list of diseases affecting Ontario cattle.



THE WESTERN FEEDLOTS REPORT . . .

"FROM A FASTER START TO A FINER FINISH,

FEED 'EM DYNAFAC!"

"You can almost see them growing . . . those slick hair coats and big briskets are what I like . . . no scours at all since we started feeding Dynafac . . . man, what a difference in feed costs!"

These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

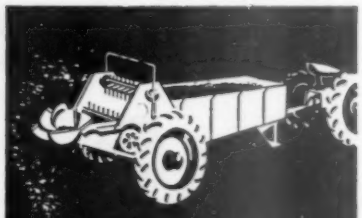
Operators report good results using both Dynafac and hormones, either oral or implant. Each additive works in its own way to give you improved efficiency. Not a hormone, Dynafac remains in the intestinal tract to do its job—controls harmful bacteria and fungi without disturbing beneficial organisms in the paunch.

Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

You, too, can make bigger profits by feeding Dynafac. Why not get it into your feed now?

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.



It's DANNEN for FERTILIZER and

- Feed Ingredients
- Soybean Oil Meal
- Tankage, Meat Scraps
- Cottonseed Meal
- Grain Fumigants

DANNEN MILLS, INC.

Grain and Jobbing Division

St. Joseph, Mo. Phone 3 0281

DANNEN

Promotion Announced By Wirthmore Feeds

L. L. Peterson

WALTHAM, MASS.—L. L. (Larry) Peterson has been named administrative assistant to R. D. Emmons, sales manager of Wirthmore Feeds, Inc., Waltham.

Mr. Peterson was formerly bulk feed supervisor and assistant division sales manager in the company's central region. A graduate of the State College of Washington, he was assistant sales manager for Kasco Mills, Waverly, N.Y., when Kasco merged with Wirthmore in 1955.

Wirthmore also has announced that it has initiated a training program for all sales-service personnel. The program is designed to provide the company's field representatives with the latest in product knowledge and feed merchandising, according to C. E. Abrahamson, who is in charge of the plan.

Mr. Abrahamson said the 10-day course will also better acquaint the sales-service people with the firm's research, advertising and production operations. He explained that small groups of Wirthmore representatives will attend one of several consecutive sessions until the entire sales-service organization has been exposed to the program.

College Reports Calves Gain Less on Pellets

ST. PAUL—University of Minnesota researchers say feeding trials at the university indicate that "pelleting a complete starter ration for dairy calves does not pay."

W. A. Olson and Dr. J. B. Williams, department of dairy husbandry, report that in recent experiments calves getting the starter ration in pelleted form averaged .97 lb. daily gain for the first 84 days. Calves getting the same feed in meal form gained 1.18 lb. daily. When the trial was conducted on a second group of calves, results were identical to the first comparison.

The starter used in this test, the researchers said, contained ground corn, soybean oil meal, ground alfalfa, molasses, wheat bran, beet pulp, salt, bone meal and a feed additive.

"The same test showed little difference between fresh and dried skim milk for calves," the report continued. "Those on fresh skim milk averaged 1.09 lb. daily gain for the 84 days, and calves getting dried skim milk gained 1.06 lb. per day. The difference is not enough to be important."

Announces Installation Of 20 Grain Dryers

MINNEAPOLIS—Grain dryer installations are showing a steady increase among grain handling firms, according to industry reports. A further indication of the trend is a report from Daycom, Inc., Minneapolis.

The firm announced that it has recently supplied Arid-Aire grain dryers to 20 firms in eight states. Installations were made in Texas, Iowa, Kansas, Nebraska, Ohio, Missouri, Illinois and Indiana.

Fattening Lambs Fed Fluorine in Utah Tests

LOGAN, UTAH—High concentrations of fluorine contained in forage have had no measurable bad effects when fed to lambs in experiments at Utah State University.

The forage, found near certain industrial plants in Utah, was fed to lambs during lamb-fattening trials. Utah researchers said the tests showed that "hay containing up to 160 parts per million of fluorine on a dry basis, when mixed with 50% grain, can be fed to fattening lambs for 14 weeks without adverse effect on feed lot performance."

Levels of fluorine fed in the trials exceeded the concentrations recommended by the National Research Council and would probably produce fluorosis if fed for extended periods, it was reported.

Hay used in the fattening study had a fluorine residue of 55 p.p.m., and sodium fluoride was added to the diet for higher levels of consumption.

Dr. Lorin E. Harris, animal husbandry department, headed the study. He noted that fluorine is generally present in almost all feeds consumed by livestock and that low levels can be ingested for definite periods without economic loss. But it is toxic, he said, when ingested in amounts above the "critical" level. The degree of toxicity depends on the amount fed and the length of time over which it is consumed, he said.

Feeder Pig Production Profitable in Alabama

AUBURN, ALA.—Alabama farmers who don't produce enough grain to finish out hogs to market weight have been advised by an Alabama Polytechnic Institute extension hog marketing specialist that feeder pig production is proving to be a good enterprise.

The specialist, Ray Cavender, said 10 brood sows on five acres of land can increase the net farm income by $1 000 a year. Many producers have found that two litters per sow per year, with the pigs sold at 40 to 60 lb., amount to a net income of $100 per sow per year, he said.

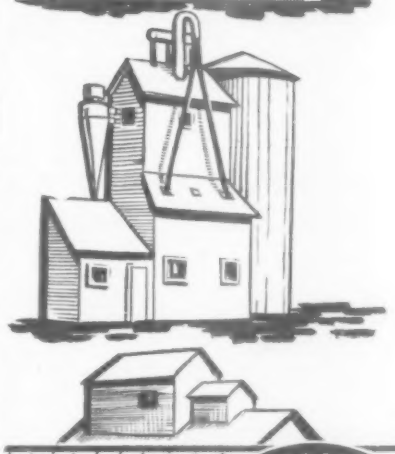
Feeder pig production was pointed out by the specialist as a profitable supplementary enterprise for a farmer whose main farming interest lies in dairy or beef cattle, sheep or broilers.

GET THE EDGE ON COMPETITION

Have Forster build your feed mill—

BIG PLANT OR LITTLE FORSTER DESIGNS AND BUILDS COMPLETE FEED MILLS

Forster-built feed mills make more profit for the owner! The right capacity and ingredient-handling help you produce the best feed at lowest cost. Forster experience and facilities assure the most efficient design and construction for your particular needs.



Because Forster also manufactures a complete line of feed milling machinery, you can expect Forster to save you money on a complete "turnkey" job.

Get in touch with Forster today.

MANUFACTURING FORSTER COMPANY

ADA, OKLAHOMA

TELEPHONE FEderal 2-6020, ADA, OKLAHOMA

At your service . . . we fly our own planes

FORSTER MANUFACTURING CO., ADA, OKLA.
Gentlemen:
I am interested in building a new feed mill.
I would like to discuss my needs with you.
No obligation.

Name.....

Street.....

City.....State.....

New Vaccine Tested To Combat Newcastle

SACRAMENTO, CAL.—An attenuated live virus vaccine for Newcastle disease of chickens has passed all experimental tests and may be in the hands of poultrymen within a year, according to Dr. Raymond A. Bankowski, veterinary scientist of the University of California at Davis.

He has received word from the animal disease and parasite branch of the agricultural research division, U.S. Department of Agriculture, that his vaccine has been tested with excellent results.

"Over 80,000 chickens of various ages have been vaccinated under laboratory and field conditions," Dr. Bankowski said. "During a period of 79 weeks there has been no spread of the virus from vaccinated to non-vaccinated birds in the same pen. Furthermore, no symptoms or untoward reactions were observed following vaccination.

"I am hopeful that the vaccine will be in poultrymen's hands within one year. The university already has approached a number of interested commercial producers of vaccine."

Two of the most important differences between the new vaccine and older types are that Dr. Bankowski's vaccine offers excellent protection for a long time, and does not cause a drop in egg production when administered to susceptible laying hens. The vaccine also provides outstanding protection to broilers, Dr. Bankowski said.

The new vaccine can be given to chicks of any age, and it does not spread the disease to unvaccinated susceptible penmates. It does not produce symptoms of Newcastle disease, and does not cause a flareup of other hidden diseases in the flock, such as infectious bronchitis.

Effect of Tranquilizer On Cows Insignificant

EAST LANSING, MICH. — Dairy scientists at the Michigan State University Agricultural Experiment Station checked the effect of hydroxyzine tranquilizer on cows, and reported that they didn't get any significant boost in milk production, body weight or feed efficiency to hardly tell about.

The cows under test were fed five levels of a supplement containing hydroxyzine. Doses ranged from 2.5 mg. to 50 mg. per cow per day.

At the level of 2.5 mg. per day, cows produced 46.1 lb. of milk. Cows getting 5 mg. of the supplement per day in their feed gave 45.6 lb. of milk. The comparison group in this trial getting no tranquilizer turned out 45.6 lb. of milk per day.

Cows receiving 10 mg. per day produced 33.5 lb., compared to 32 lb. for the control group.

At the level of 30 mg. per day, treated cows gave 27.9 lb. while control cows produced 28.8 lb. of milk per day.

Where 50 mg. of supplement were included in the ration, milk production averaged 30.3 lb. a day. Control cows produced 29.8 lb.

According to Dr. Charles A. Lassiter, who reported the results of the test, the only place where the tranquilizer did any good was at the level of 10 mg. per day. He said that he does not think the increase in milk production is great enough to be practical. The dairy scientist says it is possible that one of the other tranquilizers can help cows produce more milk.

CHANGES DEPARTMENTS

NEW YORK—C. L. (Jack) Gemmell, formerly of the Jacksonville, Fla., office of Bradley & Baker, has transferred from the feed department to the fertilizer division of the firm, it was recently announced. His new headquarters will be in Florence, S.C.

Accurately Blends and Spreads Three Fertilizers At The Same Time!

Now, offer mixed analyses at low, bulk rates!

Three separate feedgates, each with a test box for accurate metering, control the amount of spread. The driver can change the fertilizer ratio for varying soil conditions while in the field! Now, you can spread 3 kinds of fertilizer in one pass through the field . . . whereas, before it took 3 separate trips to do the job! A 7 h.p. gasoline engine drives the twin spinners at a constant rate, regardless of truck speed. The 36" belt-over-chain conveyor is powered from a drive-shaft drive synchronized to truck speed . . . for precise per-acre requirements. Optional equipment meters herbicides and insecticides into the fertilizer . . . spreads all three at once.

A *Powered Flow-Divider* assures even distribution of materials to both spinners, regardless of the position of the L-42S on hillsides or level ground. Customers appreciate this feature as it results in an even crop growth throughout the field.

NEW LEADER Model L-14S LIME SPREADER

is a high quality rig with a low price tag!

Cut your in-the-field costs with this simple to operate, easy to maintain spreader. Merely set the feedgate opening, start the truck, engage the PTO and start spreading! Material is delivered to the twin spinners over a wide 24" conveyor. Also available with a center dump for stock piling and windrowing.

NEW LEADER *Engine-driven* Spreaders: Model L-52S with 24" conveyor is built for widespread use. Model L-62S with a 30" conveyor is for extra heavy, widespread lime applications. Both spreaders can also be used for fertilizer.

Model L-19S Combination Spreader With PTO Drive, 24" Conveyor and Twin Spinners Delivers Fast, Uniform Spreads!

Simple operation saves time and upkeep. Just set the feedgate opening . . . start the truck engine . . . engage the PTO . . . start spreading! The body has 45° angle sides to prevent bridging—heavily reinforced to stop warp and twist—extended 6" higher to hold bigger payloads with less blowing.

NEW LEADER *Engine-driven* Combination Spreaders are also available: Model L-22S with a 7.0 h.p. engine and Model L-32S with a 12.5 h.p. engine to deliver plenty of power for heavy applications of lime or fertilizer.

Ask Your Nearest NEW LEADER Distributor for a Demonstration!

ALA.—G. C. Phillips Tractor Co., Inc., Birmingham and Prichard
ARK.—Truck Eqpt. Co., Fort Smith, Springdale
Southern Eqpt. Co., Little Rock, El Dorado
COLO.—Madron Mfg. Co., Inc., Denver
DEL.—Bohr Spreader Service, Inc., Harrington
FLA.—Henry W. Conibear, Lakeland
G. C. Phillips Tractor Co., Inc., Birmingham and Prichard (Ala.)
GA.—Brooker Truck Eqpt. Co., Atlanta
IDA.—Oscar Bennion, Murray (Utah)
ILL.—D. H. Thomas & Son, Inc., Rockford
Koste Mach. Co., Inc., Robertson (Mo.)
Truck Eqpt. Co., Peoria
IND.—Emmert Trailer Corp., Elkhart
South Side Eqpt. Co., Inc., Indianapolis
Mulzer Brothers, Tell City, Ind.
IOWA—Badger Body Mfg. Co., Omaha
Snyder-Meylor Co., Sheldon
Woodlor-Kraus Eqpt. Co., Inc., Cedar Rapids
KANS.—Perfection Truck Eqpt. Co., Wichita
Dealers Body & Eqpt., Kansas City
Perfection Spring & Eqpt., Kansas City
KY.—Mulzer Brothers, Tell City (Ind.)
Md.—Bohr Spreader Service, Inc., Harrington (Del.)
MICH.—Goes Seed & Eqpt. Co., Saginaw
Emmert Trailer Corp., Elkhart (Ind.)
Ostrom-Johnson Co., Rice Lake (Wis.)
Riedy-Manner Truck Eqpt., Toledo (Ohio)
MINN.—Snyder-Meylor Co., Sheldon (Iowa)
Ostrom-Johnson Co., Rice Lake (Wis.)
MISS.—A. P. Lindsey, Distr., Inc., Jackson
MO.—Koste Mach. Co., Inc., Robertson
Dealers Body & Eqpt., Kansas City
Perfection Spring & Eqpt., Kansas City
NEB.—Agrifirst Chem. Corp., Lincoln
Snyder-Meylor Co., Sheldon (Iowa)
NEV.—Lovelock Welding, Lovelock
N.J.—Bohr Spreader Service, Inc., Harrington (Del.)
N.Y.—H. O. Penn Mach. Co., Inc., New York, Westbury, L. I., and Poughkeepsie
Schmitz Sales & Serv., No. Collins
N.C.—O. H. Stanard, Raleigh
N.D.—Snyder-Meylor, Sheldon (Iowa)
OHIO—Orran Hofstetter, Orrville
D. L. Phillips, Damascus
Riedy-Manner Truck Eqpt. Corp., Toledo
Schodorf Truck Body & Eqpt. Co., Columbus
PA.—Annville Body Co., Annville
Ira D. Haines, Waynesburg
D. L. Phillips, Damascus (Ohio)
S.C.—O. H. Stanard, Raleigh (N.C.)
S.D.—Snyder-Meylor Co., Sheldon (Iowa)
TENN.—Tennessee Distr. Co., Donelson
UTAH—Oscar Bennion, Murray
VA.—O. H. Stanard, Raleigh (N.C.)
W. VA.—Farmers' Truck & Impl. Co., Buckhannon
D. L. Phillips, Damascus (Ohio)
WIS.—Brooks Industrial Sales, Inc., Sun Prairie
Ostrom-Johnson Co., Rice Lake

Our Business Is S-P-R-E-A-D-I-N-G-!

• New Management! • New Nationwide Service!
• New Distribution! . . . means more profit for you!

Write for illustrated literature.

HIGHWAY EQUIPMENT COMPANY

630 D. Ave. N. W. Cedar Rapids, Iowa

BOWMAN PRODUCTS

VIANOL
Oil soluble vitamin protector and pigmentation aid.

BoA-S and Bo-A
Stable dry vitamin A products.

BoDEE
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

BoDEE (Mineral) STABLE VITAMINS D
Vitamin D that will not decompose when combined with minerals.

XANTHOPHYLL CONCENTRATES
For better poultry pigmentation.

HYDROPOID
Dry, free-flowing partially hydrogenated animal fat.

CLOROFOLEN
Effective dog food deodorant.

Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

THE HIPPO

Because he lives a life serene
Never are his haunches lean.
The only problem for the Hippo
Is a scale that he can't tip-o.

AN ENORMOUS RESULT FROM A RELAXED LIFE

How to relax, conserve energy and amass weight is a hippopotamus' secret unknown to the chicken. ■ LIPAMONE, the only poultry feed additive producing hormone-like results, has a built-in calming effect on broiler and roaster flocks. ■ Growers report birds on LIPAMONE are quieter, less given to cannibalism and pile-ups. Some growers have even stopped debeaking.* ■ LIPAMONE's in-the-feed action offers finer finish, better bloom, best fat distribution, excellent weights and feed conversion, and greater carcass uniformity. *Names and facts supplied upon request.

economical.....no labor costs
effective..... no misses
efficient..... no off-feed reactions
safe..... no shock to trigger CRD and other diseases

LIPAMONE®

Sold through leading feed outlets in their broiler and roaster finishing feeds

FINISH IN THE MONEY

White's

Agricultural Division / WHITE LABORATORIES, INC. / Kenilworth, N. J.

LIPONETTE® the 24-carat bird

Illinois Survey Shows Boost in Grain Trucking

URBANA, ILL. — Truckers move far more grain, particularly corn and oats, from Illinois country elevators today than they did 10 years ago, according to a recent study by Dr. C. P. Schumaier, University of Illinois agricultural economist.

Illinois elevators bought some 273 million bushels of corn during the survey period. This was 55% of the total grain bought. Corn made up the largest volume of any single grain trucked. Elevator men reported that 27% of the corn they bought went out again by truck.

During the same period, elevators reported buying 43.4 million bushels of oats and shipping 34% out by truck. Percentage-wise, more oats were shipped by truck than any other grain covered in the survey.

Dr. Schumaier's report shows that 25% of the soybeans and 26% of the wheat brought to country elevators left by truck.

"The increase in grain trucking has brought some changes in Illinois grain marketing and distribution, and these changes may become more important in the future," Dr. Schumaier said.

"For example, country elevators must be located close to highways as well as to railroads. Elevators should be large enough to handle the longer, wider and heavier trucks likely to be used in the future.

"The shift to grain trucking should also permit a more flexible and probably more complicated grain price structure. Country elevators will have to provide more services in carrying inventories, establishing prices and taking financial risks. Eventually grain dealers and brokers may assume much of the buying and selling for truck movement, much as they now do for rail shipments.

"Developments associated with the trucking increase include doubling of rail freight rates since 1946, growing outlets for barge grain, need for a backhaul for truckers hauling other agricultural products long distances and increased trucking of processed grain products, such as flour and feed.

"Unless there is a general reduction in rail freight rates for grain and grain products, the trend to trucking Illinois grain will probably continue."

Animated Cow Shown At 'Atoms' Conference

COLLEGE PARK, MD.—An animated cow designed to show how the dairy cow converts feed into milk was exhibited at the International Atoms for Peace Conference held recently in Geneva, Switzerland.

The exhibit was developed by Dr. Joseph C. Shaw and fellow researchers at the University of Maryland's dairy husbandry department.

Dr. Shaw was one of two U.S. scientists in the animal field to be selected as a delegate to the conference. He and his group were invited to present a paper at the conference, and to prepare the cow exhibit.

They have done a great deal of work during the past few years with radioisotopes in determining how feed is broken down in the rumen, how the end products in the rumen pass into the blood, how the blood substances are altered by the liver and, finally, how these altered substances are converted into milk.

The work has been done by keeping the rumen of the cow and the liver and the udder alive, for an hour or more, after removing these organs from the animal immediately after slaughter. Each organ is kept alive by an artificial heart and lung. By making simple feed substances radioactive it has been possible to trace the substance through the various organs and into the milk.

"This is something that cannot even be attempted without the use of radioisotopes. We have done sufficient work to date to indicate to us quite clearly that we shall soon be able to discard much of the older, expensive and long-time studies involving massive feeding trials, digestibility experiments and so forth," Dr. Shaw said.

"We can now exert a remarkable control over the fat content of milk, and upon the efficiency of milk production and of body weight gains in beef cattle by controlling what goes on in the rumen of the cattle. This has come about primarily through the use of radioisotopes."

Robert A. Riepe

HONEGGERS' APPOINTMENT — Recently named to the position of assistant controller and assistant treasurer of Honeggers' & Co., Inc., was Robert A. Riepe. The announcement comes from E. F. Dickey, executive vice president and general manager of the Fairbury, Ill., feed firm. Mr. Riepe formerly was at Burlington, Iowa, where he was with a farm implement concern.

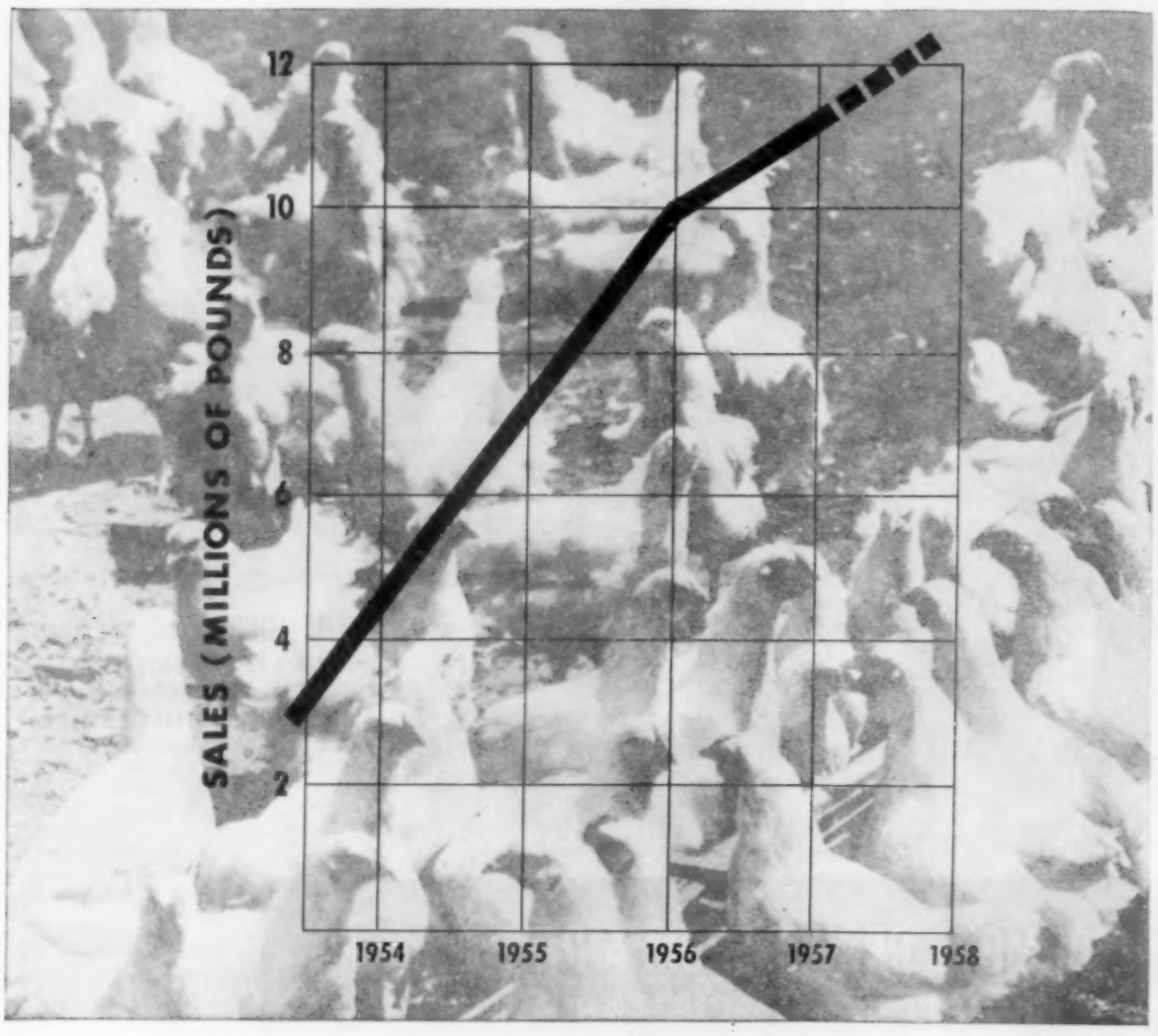
New Poultry Facilities

NEW BRUNSWICK, N.J. — New Jersey's Gov. Meyner recently dedicated new poultry and horticulture facilities at Rutgers University.

The poultry building annex, along with laboratory and other buildings at the poultry research farm, cost $700,000.

ADDS MOBILE MILL

MINOT, N.D.—Harrington Brothers Farm Store is now operating a mobile feed mill. The mill is operated on a regular route schedule.



OFFICIAL GOVERNMENT FIGURES PROVE AMAZING GROWTH OF BHT ANTIOXIDANT

Figures of the U. S. Tariff Commission report sales of all forms of butylated hydroxytoluene have almost tripled in just three years! Such a record must be based on outstanding performance.

Dalpac FG-95, Hercules BHT, is already established as a leading feed antioxidant. Dalpac protects vitamins A, D, and E, carotene, xanthophyll, and other nutrients. For the farmer it means better health, pigmentation and growth of his stock. For the feed manufacturer, Dalpac means a top-quality BHT that minimizes over-fortification of vitamins and prevents rancidity. And Dalpac is economical—just 4 ounces to the ton does the job.

For information on how Dalpac can improve your formulation, write Hercules.

Dalpac is available nationwide from:

Chemical Department McKESSON & ROBBINS, INC. *155 E. 44th Street, New York, New York*

DALPAC® FEED GRADE BHT

Oxychemicals Division • Naval Stores Department
HERCULES POWDER COMPANY
INCORPORATED
900 Market Street, Wilmington 99, Delaware

N058-2

Studies on Pelleting Coastal Bermuda Grass Cited

MACON, GA.—The southern cattle industry is said to have got another shot in the arm with the release of research data indicating the development of a new disease-resistant forage and successful experiments in pelleting Coastal Bermuda, the South's "wonder grass."

According to Harvey C. Lowery, Georgia Extension Service, the new forage will be a satisfactory replacement for the Southland oats which have become highly susceptible to crown rust and other diseases.

The new variety, designated AB-110, has the rapid growth and vigor of Southland, plus added resistance to crown and stem rust and will produce an abundance of early forage in the fall, and "if not damaged by cold weather, will produce large amounts of forage throughout the grazing season."

"Forage yields have been good during mild winters," Mr. Lowery declared. "Although grain yields have not been high, they are thought to be satisfactory for seed production and dual purpose use of this oats variety. The grain quality and test weights are unusually good."

Pelleting

The pilot plant to pellet Coastal Bermuda grass, recently installed at Clemson College, was designed by Clemson's agricultural engineers, with the expectation of producing higher quality livestock and poultry feeds.

E. B. Rogers, who supervises the plant operation, says the Coastal Bermuda is being cut and moved as quickly as possible from the field to the dehydrator, where it is reduced to a moisture content of approximately 10%. The dehydrated Coastal is then sent through a hammer mill and pelleted.

According to Dr. M. D. Farrar, Clemson's dean of agriculture, alfalfa meal and pellets have long been a popular feed of livestock and poultry producers. The drawback, as far as the southern states are concerned, is that alfalfa is grown in the Midwest and high freight charges are involved in getting it into this section of the country.

"What we are trying to do at Clemson," Dr. Farrar said, "is to determine if a high quality feed can be produced by pelleting Coastal Bermuda. Since it is grown in large amounts on Clemson's experimental plots, we hit upon the idea of trying to pellet this popular livestock feed and investigations revealed that the possibilities of such an operation were excellent."

Dr. Farrar added that while tests will have to be completed before definite conclusions can be drawn about the feeding value of pelleted Coastal Bermuda, two projects are being conducted by the animal husbandry department in feeding the pelleted Coastal to hogs and to lambs.

Visiting Feed Men See Morea Mixing Facility

YORK, PA.—Feed manufacturers from New York, Pennsylvania and Virginia recently took a look at some livestock feeding operations at the Morea liquid feed mixing plant of Hespenheide & Thompson, Inc., York.

Hespenheide & Thompson is the first eastern mixer-distributor appointed by U.S. Industrial Chemicals Co. to blend Morea.

About 40 feed men took part in the tour, which included a trip to cattle, dairy and sheep farms in the York-Lancaster area. The farms are utilizing the liquid feeding methods.

The visiting feedmen were among those who are prospective handlers of Morea supplement in the future.

SUNSET FEED & GRAIN CO., INC.

PHONE CLEV. 2938 — 805 Dun Building, Buffalo 2, N.Y. — TWX BU 71

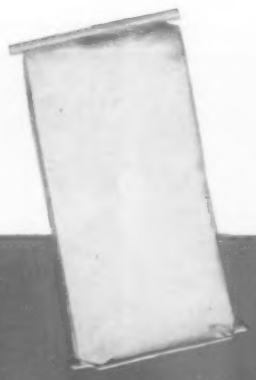
FEED JOBBERS
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED

JUST THINK...
I only

SHELL OUT
$5.00 a year* to keep abreast of the rapidly changing Feed Industry.
*Less than 10 cents per week for 52 issues of...
FEEDSTUFFS



Appearance may be improved through better design, sharper color printing, reproportioning, or better choice of outside wall.

A frank discussion with us may result in a more attractive bag, reduced production costs and increased sales of your product.

When will you talk with our representative?

KRAFT BAG CORPORATION
Gilman Paper Company Subsidiary
630 Fifth Avenue, New York 20, N. Y.
Daily News Bldg., Chicago 6, Ill.
Integrated mills at St. Marys, Georgia and Gilman, Vermont

The Newest **KRAFTPACKER**
will handle any free-flowing material I-a-e-t-e-r, with more accuracy, than any bag filling machine of its type!

☐ We are interested in improving our bag.
☐ We are interested in your Kraftpacker. F

NAME OF COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE____ PRINCIPAL____
PRODUCT MFD._____

POULTRY MEETING SCENES—These two photos from the Nebraska Poultry Improvement Assn. convention held recently at Lincoln, Neb., show winners in a Nebraska Poultry & Egg National Board salesmanship contest and a "Breakfast With Betty Crocker" in the second. Left to right in the first picture are Arnold Grabowski, Roscoe Hill Hatchery, Lincoln, first place winner; Lloyd Geil, general manager, PENB, Chicago; John Voss, Ralston Purina Co., Omaha, second place winner, and Charles Adcock, Allied Mills, Inc., Kearney, who placed third. Over 300 home economists, poultrymen, industry representatives and their wives attended the "Breakfast With Betty Crocker." Left to right are Mr. Geil; R. M. Hendrickson, General Mills, Inc.; Miss Thomas, representing Betty Crocker; Mrs. Donald Warner, Central City, Donald Warner, district sales manager, General Mills, and Dr. Oscar Berghel, Omaha.

Says Diversified Farmer Will Have Competitive Advantage in Producing Eggs

LINCOLN, NEB.—"The flexibility of farm operations will be a long-run competitive advantage over specialized egg production," according to Francis L. Kutish, agricultural economist at Iowa State College.

Speaking at the annual convention of the Nebraska Poultry Improvement Assn. here recently, Mr. Kutish said that with greater farm mechanization the farm family can handle the required 600 to 1,200-bird flocks needed for efficiency and quality production. Midwest states can continue to lead in egg production, he declared.

"Diversified farms with larger sideline flocks can better weather market ups and downs than the large commercial producers," he said, but the state must get active in quality production and marketing.

Mr. Kutish was one of several speakers who discussed general poultry problems at the three-day meeting.

Discussing the broad aspects of turkey nutrition was Dr. Ted Milby, Larro Research Farm, General Mills, Inc., Indianola, Iowa. He pointed out how protein levels and feeding systems can be progressively adjusted to produce maximum profits for the grower. He said complete feed is the efficient method to consider as the industry looks toward the future.

Peter Crafts, president, National Turkey Federation, Rosmoore Farm, Grasmere, N.H., said turkeys are now becoming more and more a year around product. Americans are now eating 6 lb. per capita, compared with 2 lb. 10 years ago.

"Control of Egg-Transmitted Turkey Disease" was the subject of a panel held as part of the program. Participating were Dr. John Adams, poultry husbandry department, University of Nebraska, moderator, and Reed Rumsey, Dr. Salsbury's Laboratories, Charles City, Iowa; Dr. R. T. Renwald, Gland-O-Lac Co., Omaha; Dr. Dan Russell, I. D. Russell Co., Kansas City, and Dr. J. M. Tufts, animal pathology division, Ralston Purina Co., St. Louis.

Another panel discussion, "The $64,000 Que[illegible]," moderated by Don Turnbull, executive secretary, American Poultry & Hatchery Federation, Kansas City, was used to answer questions by bankers, county agents and others interested in new developments in poultry production and management.

Richard [illegible]kin, poultry division director of the U.S. Agricultural Marketing Service, Washington, spoke on a long-range trend toward control of commodities by each commodity group in self-administered programs. He pointed out the potential market increase with a population growth of 3 million persons a year and discussed the trend toward high protein diets.

An address by Ed Wimmer, National Federation of Independent Business, Cincinnati, pointed out that the swift growth of the poultry industry was bound to result in growing pains harmful to many persons. The industry has grown up, he said, and should act like a grown-up in facing its problems.

Production of chickens for meat purposes increased by more than 25% in five years, he said, but the number of farms selling chickens dropped by about 45%.

"Bad conditions in the poultry industry can be traced directly to unfair trade practices and the loss-leader selling that forced the small operators out of business, or into some kind of contract growing," he said. "Integration in any field is the road to concentration, and concentration of any business in fewer and fewer hands has not been good for any business in the country."

Southeastern Poultry Meeting Dates Set

ATLANTA — Attendance at the 1959 Southeastern Poultry & Egg Assn. convention here Jan. 26-28 is expected to break the 5,000 mark for the first time in the association's history, Henry Tilford, Jr., convention chairman, announced recently.

Attendance has risen each year and was near 5,000 in January of 1958. Mr. Tilford said most downtown hotel space is already booked, and he urged immediate reservations for remaining accommodations.

Some early confirmations of speakers have been announced. Among these will be Dr. J. W. Stadelman, poultry scientist at Purdue University, and Courtney P. Allen, Hy-Line Poultry Farms research laboratories, Dallas Center, Iowa. They will speak Jan. 27.

Dr. Stadelman will discuss the cleaning and shell treatment of eggs and Dr. Allen will talk on blood characteristics as a hereditary factor in egg production.

Dr. James E. Gates, dean of the College of Business Administration, University of Georgia, will address the opening afternoon session Jan. 26 with a discussion of creative thinking.

Also being planned is a turkey program featuring well known authorities in the industry.

Poultrymen Get Word Of Caution in Adopting New Lighting System

FT. COLLINS, COLO. — Colorado poultry raisers have been advised to go slow in adopting an extensive controlled-lighting system, called "stimulighting."

T. E. Hartung, extension poultry specialist at Colorado State University, says the new system is complicated, and adds, "While we know there is some response in the form of increased egg production, we do not yet know why."

According to the system, the producer severely limits the lighting for the growing pullets. The birds are restricted to 6-8 hours of light a day when they reach about six weeks of age until they are 20 weeks of age. Then, starting at 20 weeks, the light is boosted at the rate of 18 min. of light a week. By the time the birds have been in production for a year, they are receiving 21½ hours of light a day.

For some reason which scientists have not been able to pinpoint, hens under "stimulighting" apparently produce more eggs than those kept on a conventional lighting system. However, these results have been obtained through only limited numbers of tests. There is a more pronounced effect on birds which are hatched and raised during the late winter, spring and early summer months when days are long. But there is less value in the use of "stimulighting" if the birds are hatched during the months when the daylight hours are few—from July to December, Mr. Hartung explains.

"There are some definite problems involved in 'stimulighting'," Mr. Hartung says. "First of all, the system requires a windowless poultry house where there is rigid control of lighting conditions. The house also must have a good ventilation system. Otherwise, the program would be a complete failure. Another barrier is that mixed ages in the laying house would upset plans for a lighting system geared to the age of the layers.

"Until we obtain more information on the 'stimulighting,' we are advising flock owners to stick to the conventional lighting system. This means 14 hours of light per day, provided by a 40-watt bulb for each 200 sq. ft. of floor space in the house."

Pacific Grain Dealers Set Committee Jobs

SPOKANE, WASH. — Committee appointments for the Pacific Northwest Grain Dealers Assn., Inc., have been announced by J. D. Urquhart, president.

The committees and their chairmen are: Warehouse—Frank Schreck, Waterville Union Grain Co., Waterville, Wash.; Transportation—D. D. Danekas, Ritzville Warehouse Co., Ritzville, Wash.; Seed Improvement—A. C. Patton, United Grain Growers, Harrington, Wash.; Grain Sanitation—Roy Reed, Touchet Valley Grain Growers, Waitsburg, Wash.; Grain Products—W. A. Peters, Spokane Flour Mills, Spokane; Grades & Discounts — R. K. Driscoll, Idaho Bean & Elevator Co., Troy, Idaho; Arbitration—R. R. Enloe, Continental Grain Co., Portland, Ore.; Arbitration Appeals—Francis Greif, St. John Grain Growers, St. John, Wash.; Trade Rules—S. E. Mikkelson, Louis Dreyfus Corp., Portland, Ore.; and Membership—Claude Buchet, Pomeroy Grain Growers, Pomeroy, Wash.

The various legislative committees and their chairmen are: Washington—Maurice Roe, Columbia County Grain Growers, Dayton, Wash.; Oregon—W. T. Balsiger, Moro Grain Growers, Moro, Ore.; Idaho — Jim Shields, Shields, Buhl, Idaho; and Montana—C. B. Anderson, Anderson Grain Co., Great Falls, Mont.

FEED SURVEY—Members of the 1958 feed survey committee of the American Feed Manufacturing Assn. are shown during their two-day meeting recently in Chicago to forecast probable livestock and animal numbers, feed consumption and the balance with feed supplies for the coming 12 months.

Shown (left to right) around the outside of the table are: Dean L. S. Ellis, University of Arkansas (chairman); W. N. McMillen, A. E. Staley Mfg. Co. (industry advisor); John Matsushima, University of Nebraska; J. H. Knox, New Mexico A&M College; E. W. Klosterman, Ohio Agricultural Experiment Station; Richard L. Kathe, AFMA; L. C. Cunningham, Cornell University; W. E. Glennon, AFMA; William T. Diamond, AFMA; Oakley M. Ray, AFMA; R. J. Meade, University of Minnesota; J. O. Dunbar, Purdue University; J. F. Lasley, University of Missouri; L. A. Wilhelm, Quaker Oats Co. (chairman, industry advisors); E. L. Johnson, University of Minnesota; A. A. Heidebrecht, Paymaster Feeds (industry advisor), and G. B. Wood, Oregon State College. Seated in the second row (rear) are: N. N. Allen, University of Wisconsin; E. R. Barrick, North Carolina State College; G. E. Gordon, University of California, and Dean A. D. Weber, Kansas State College. Seated inside the tables (clockwise, starting in the foreground) are: F. A. Kutish, Iowa State College; J. R. Couch, Texas A&M College; J. A. Hoefer, Michigan State University; J. L. Van Horn, Montana State College; J. C. Driggers, University of Georgia; P. M. Reaves, Virginia Polytechnic Institute; C. I. Draper, Utah State College; W. C. Skoglund, University of New Hampshire; K. E. Gardner, University of Illinois, and Dean L. E. Jackson, Pennsylvania State University.

Mr. C. J. Hennick proved to himself the value of feeding Hygromix feeds. "I think these pigs have done real well," he says.

"I'll never worry again about worms"

"Hygromix® does the job . . . I'm sure about that!"

by Eugene S. Hahnel

C. J. Hennick and his son, John, raise about 140 pigs a year. Hygromix sounded like the answer to their worm problem, but they wanted to make sure it worked.

They put their pigs on Hygromix feeds as soon as they would eat. At about 90 pounds, they test-wormed them to see if Hygromix was doing the job. "I kept close watch of them," says Mr. Hennick, Sr., "and couldn't find a worm. With our other pigs we used to find ten to twelve worms per pig. Hygromix does the job . . . I'm sure about that!"

"Those worms just never got started," Mr. Hennick continues. "I used to have to wait until 8 or 10 weeks to worm, and damage had been pretty well done by then."

Until the discovery of Hygromix, worm damage became well-established in the pig before worms could be attacked. Worm control with Hygromix feed starts with the baby pig. Control continues throughout the critical growing period when most of the damage takes place. Hygromix accomplishes this by killing the young worms as they enter the intestinal tract.

Wilford "Bill" Kolpin (right), feed manufacturer's representative, is an interested listener as Mr. Hennick describes how Hygromix-fortified feed controlled the worm problem in his herd. "I'll never worry about worms again so long as I use feed with Hygromix" was Hennick's conclusion.

HYGROMIX®

(S. hygroscopicus fermentation products, Lilly*)*

Lilly

MAKERS OF **STILBOSOL®** (diethylstilbestrol premix, Lilly)
Procaine-Penicillin-G • Vitamin B_{12}

ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

CAPITAL COMMENT

BY JOHN CIPPERLY

Election Results

Picking up and piecing together the splinters of the administration election campaign state by state discloses, first, that losses by the GOP in the Farm Belt must be attributed to activity on the part of big labor in those areas and, second, that the election of some 47 new Democratic congressmen and 18 senators will certainly not mean new farm legislation for the next two years.

The administration defeat in the election cannot, in a major way, be attributed to Ezra Taft Benson, Secretary of Agriculture, it is asserted here, even in some Democratic circles.

Farm income conditions in selected states of the Farm Belt where there have been defections from the normal Republican stronghold would not justify the desertion of the farmers from their previous and historic preference for GOP.

Record Gross Income

Using Nebraska as a prime example of farm income, official data shows that in that state farmers have obtained the highest gross farm income on record for the first 7 months of this year with cattle and hogs the top income producing commodities. They represent 60% of the cash income from farms in that state.

Wheat farming which reflects 15% of the farm income is up 15% this year reflecting the highest wheat yields on record.

It has been reported to Feedstuffs from substantial wheat farm sources in Nebraska that individual farmers are holding in their own storage facilities as much as 100,000 bu. of penalty wheat which they do not intend to market this year, preferring to hold it back for other years as a crop insurance venture on their own account.

Minnesota, where veteran Republican senator Edward Thye was caught in a Democratic trend, represented a farm area where under the Benson policies, farm income is up this year by 4% again the highest on record. Cattle, hogs and dairy commodities represent equally 20% of the total farm income from the state. Sen. Thye never espoused the Benson farm philosophy, and it seems hard to believe that the Benson "burden" can be charged to his defeat.

Administration congressional losses in Indiana can hardly be charged to Mr. Benson. All major farm commodity prices for that state were pushing to peak levels prior to election.

No Farm Action Seen

It would be unwise to accept superficial judgment on the election returns, considering it a repudiation of Mr. Benson's policies and meaning that the incoming congress with its large majorities in both chambers will mean an abrupt reversal of the Benson farm philosophy.

On the contrary, substantial opinion here sees in the preponderant Democratic majorities in both chambers an impasse in farm legislation —in fact, a stalemate in any farm action.

This election will prove to be meaningless as far as new farm legislation is concerned, and dealers and suppliers in the farm community would be wise, according to post-election opinion, to hew to the line of aggressive merchandising of agricultural commodities and ignore the overtones of what is erroneously described as a political upheaval.

★

Corn Price Supports

The election returns may further cloud up the future of corn price support in the U.S.

For the next corn crop approximately 85% of all corn produced in the nation will be supported at higher price levels than those which prevailed for the 1958 crop.

In the 1958 crop year only 15% of the corn produced in the commercial Corn Belt complied with acreage allotments and had available support at the top level of a national average of $1.36 bu. In the non-commercial Corn Belt the corn farmer obtained support at 75% of the complier's price support level or approximately $1.03 bu.

At the same time the non-compliers in the commercial Corn Belt got a price support level of $1.06 bu.

The fiction which has been given wide currency is that Mr. Benson has lowered the level of price support for corn—particularly if the corn acreage allotment referendum is beaten in the up-coming vote on Nov. 25.

Such reports are false and should be so considered by the entire feed industry.

In the old commercial Corn Belt, if the acreage allotment is defeated, it will mean that all corn farmers will obtain next year under previous-

How Du Pont helps you sell feeds containing TWO-SIXTY-TWO®

FEED COMPOUND

DU PONT advertisements like the one on the right are telling dairymen that the top purebred herds in the country are fed rations containing "Two-Sixty-Two."

This Du Pont ad is appearing in "Hoard's Dairyman" and other leading farm publications. It features the Mapoval Farm Holstein herd, one of the largest and most outstanding purebred herds in the country, a herd that is fed a dairy ration containing "Two-Sixty-Two."

Leading herds of the other dairy breeds will be featured in a continuing series of advertisements to dairymen. All of them will back up your sales effort by telling dairymen about the success achieved in feeding rations that include "Two-Sixty-Two."

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

• Irvin Macafee and his three sons, who operate Mapoval Farms, Inc. Together they farm 750 acres lying between Milan and Athens along Route 220 in Bradford County, Pa. Right: A portion of the Mapoval Farms Holstein herd that recently produced 14,212 lbs. of milk and 535 lbs. of fat. Owned by the Macafee family, this farm uses good breeding, careful management, good pastures like that shown here, and dairy rations which include Du Pont "Two-Sixty-Two" feed compound to produce an excellent record of success.

How the Macafees make an average of

14,212 lbs. milk . . . 535 lbs. fat from their Mapoval Farms Holstein Herd

Mapoval Farms, Inc., in Milan, Bradford County, Pennsylvania, is a successful 750-acre farm operated entirely by the Macafee family. Irvin Macafee, who won the Pennsylvania Master Farmer Award in 1950, bought the first part of this property in 1920 and has worked steadily at herd improvement ever since. He is assisted by his wife and three sons: Ted, holder of an American Farmer degree, Robert, and John.

The Mapoval herd numbers 130 purebred Holsteins, of which 60 are in milk. The most recently completed herd average of 14,212 lbs. of milk and 535 lbs. of fat on a 305 day, 2x basis helped the Macafees qualify for their sixth Holstein-Friesian Progressive Breeder Award—the highest recognition possible from the Holstein-Friesian Association of America for outstanding herd performance—both in type and production.

The successful feeding program of Mapoval Farms consists primarily of home-grown grains, which are ground and mixed in bulk locally. The Macafees use a 30% concentrate which includes Du Pont "Two-Sixty-Two" feed compound, a top-quality urea source of protein, to bring the ration up to 12-14% protein content.

In dairy feeds, "Two-Sixty-Two" not only provides an efficient source of protein, but also helps unlock nutritive values in stimulating rumen bacteria which break down feed fibers in roughage. Just as the Macafees have done, you, too, can profitably use "Two-Sixty-Two" in your dairy supplement. Ask your feed dealer about it today, or write Du Pont.

• Typical of the producers that comprise the Mapoval Holstein Herd is Mapoval Rebel Walker (Very Good) with a three-year-old record of 16,297 lbs. milk and 594 lbs. of fat. She is a daughter of Marshline Pabst Dean Walker (Very Good), their former herd sire, which was recently sold to the American Breeders' Service.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

For dependable service, prompt delivery order "TWO-SIXTY-TWO" from your nearest agent or Du Pont office:

Agricultural Services, Inc.
402 Flour Exchange Bldg.
Minneapolis, Minn.

Arch Sales Co.
P. O. Box 9001
Stockyards Station
Denver 16, Colo.

Bartels and Shores Chemical Co.
1400 St. Louis Avenue
Kansas City 7, Mo.
700 East 17th St.
Wichita, Kansas

Davis Enterprises, Inc.
919 S. Perry St.
Dayton 1, Ohio

R. D. Erwin Co.
738 Third National Bank Bldg.
Nashville 3, Tenn.

Good-Life Chemical, Inc.
301 South First St.
Effingham, Ill.

Grandone, Inc.
Needham 92, Mass.

Harris-Crane, Inc.
221 S. Church St.
Charlotte, N.C.

La Budde Feed & Grain Co.
741 N. Milwaukee St.
Milwaukee 2, Wisc.

P. R. Markley of New Jersey, Inc.
7300 Crescent Blvd.
Pennsauken, N. J.

Piess & Sheahan
P. O. Box 2654
Memphis 2, Tenn.

Sunset Feed & Grain Co., Inc.
805 Dun Bldg.
Buffalo 2, N. Y.

Carroll Swanson Sales Co.
2215 Forest Ave.
Des Moines 11, Iowa

Van Waters & Rogers, Inc.
10216 Denton Rd.
Dallas 9, Texas
620 E. Slauson Ave.
Los Angeles 11, Calif.
3950 N. W. Yeon Avenue
Portland 10, Ore.
650 West 8th South
Salt Lake City 41, Utah
1001 Brannan St.
P. O. Box 3442
San Francisco 19, Calif.
4553 E. 41st St.
Seattle 5, Wash.
North 809 Washington
Spokane 1, Wash.

John F. Young & Co.
3270 Southside Ave.
Cincinnati, Ohio

E. I. DU PONT DE NEMOURS & COMPANY (INC.) • POLYCHEMICALS DEPARTMENT
1616 Walnut St., Philadelphia 3, Penna. • 7250 N. Cicero Ave., Chicago 46, Illinois • 2930 E. 44 St., Los Angeles 58, Calif.
Du Pont Company of Canada (1956) Limited, P. O. Box 660, Montreal, Quebec, Canada

JOHN F. YOUNG COMPANY
3270 Southside
Cincinnati 4, Ohio
WAbash 1-1950

We Are Distributors of Du Pont's
TWO-SIXTY-TWO

ly announced decisions of the U.S. Department of Agriculture price support at not less than $1.14 bu., which is about 8¢ bu. more than was available to the big majority in 1958.

For the outside corn production from the commercial Corn Belt it will mean an increase of about 12-14¢ bu. national average basis.

What has been badly misunderstood about the new Farm Bill passed at the closing session of the 85th Congress is that the national corn crop will on the whole be price supported at a substantially higher dollars-and-cents level than in 1958.

Midwest farmers recently predicted that the 1959 corn crop, weather permitting, will exceed 4 billion bushels because of the attraction of the new price support levels.

This election solved nothing in the farm problem. There is no likelihood that the heavily Democratic incoming congress will make any changes in the law passed this year.

National Distillers Announces Net Income

NEW YORK—Net income of National Distillers and Chemical Corp. for the nine months ended Sept. 30, 1958 totaled $15,069,000, equivalent after preferred dividend requirements to $1.32 a share on the 10,334,936 shares of common stock outstanding at the end of the period. This compares with net income of $17,726,000 in the first three quarters of 1957, equal to $1.61 a common share on 10,158,366 shares then outstanding.

Net sales in the 1958 nine months amounted to $372,973,000, versus net sales of $392,598,000 in the similar 1957 period.

Directors declared the regular quarterly dividend of 25¢ a share on the corporation's common stock, payable Dec. 1, 1958 to stockholders of record on Nov. 10, 1958. The regular quarterly dividend of $1.06¼ a share on the preferred stock was also declared, payable Dec. 15, 1958 to holders of record Nov. 17, 1958.

Alabama Feeder Calf Sales Show Increase

MONTGOMERY, ALA.—More and better feeder cattle are being sold in Alabama, and feeders are being shipped as far as Michigan in the North and Texas in the Southwest.

"But more and more of Alabama's feeder animals are being bought by Alabama cattlemen," A. E. Jones, marketing specialist with Auburn extension service, pointed out.

"Although Corn Belt conditions are not entirely comparable with those in Alabama," he continued, "cattlemen in this area are bringing heavier and higher grades of animals to slaughter markets after grazing, feeding and finishing."

While Corn Belt cattlemen depend on shorter feeding periods for yearling steers, utilizing feedlots near adequate sources of grain, Alabama operators depend more on winter and spring grazing and a shorter grain feeding period before the steers are marketed in the spring, Mr. Jones said.

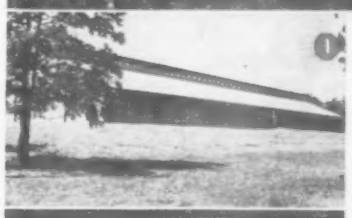
"The danger of a severe price break for fed cattle next year is small," Mr. Jones added, "because the over-all supply of beef looks fairly stable.

"But profits may drop, largely because prices farmers paid for feeder cattle this summer were as much as $6 higher than prices paid a year earlier."

GET DETAILS ON *Blue Bonnet*
BEFORE YOU BUY ANY
BULK STORAGE OR FEED TANK

EXCLUSIVE FEATURES!
—Two directional discharge valve
Allows one feed tank to serve two buildings
"V" design valve with lever action cleanout
Rugged construction
Easy loading hatches
Weathertight roofs
Easy add-on units permit capacity increases after erection with most models

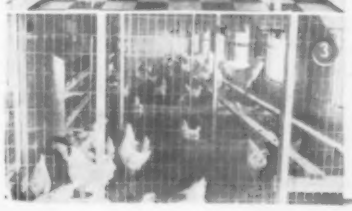
See your dealer or write for literature today!
KILBY STEEL COMPANY
ANNISTON, ALABAMA



1 LAYING HOUSE
This is one of the farm's laying houses. 42,000 hens are in production at all times.

2 LAYING HOUSE
Typical interior view of laying houses. Breeding farm has total bird capacity of 137,000.

3 BREEDING FARM INCUBATORS
This interior view of the hatchery shows the spotless, efficient condition maintained at all times.



TYPICAL BREEDING PEN
216 pedigreed breeding pens assure a precision record of progress.

YOU ARE INVITED
TO VISIT THE HOME OF
THE *Peterson Male*

Many broiler industry leaders have described the Peterson Breeding Farm as the nation's finest. You will enjoy seeing the facilities and meeting the people behind the Peterson Male. During your visit, discuss your production problems with Peterson's Chief Geneticist, Dr. A. B. Godfrey. The research and experience behind the Peterson Male can be helpful to you. You will enjoy visiting and doing business with the dedicated, friendly and helpful people at Peterson's.

Distributors of the Peterson White Cornish Male

Peterson MALE
DECATUR, ARKANSAS

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Make Your Customers
GOOD Customers . . . all year 'roun

SUPREME Brand
Condensed BUTTERMILK

HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
315 South Smedley St. Phila. 3, Pa.

I read FEEDSTUFFS every week. I'm wise to FEED INDUSTRY Happenings

Best for your customers...
Best for you

PILOT BRAND
OYSTER SHELL

Through the years, PILOT BRAND Oyster Shell has been first choice with poultry raisers everywhere. That's because PILOT BRAND is almost 100 per cent calcium carbonate, the perfect eggshell material. Test after test proves that PILOT BRAND helps produce more eggs with stronger shells.

The big, day-in, day-out demand for PILOT BRAND means steady sales, fast turnovers, good profits for you. And we help keep customers coming your way with consistent national advertising in leading farm and poultry journals and on more than 70 prominent radio stations.

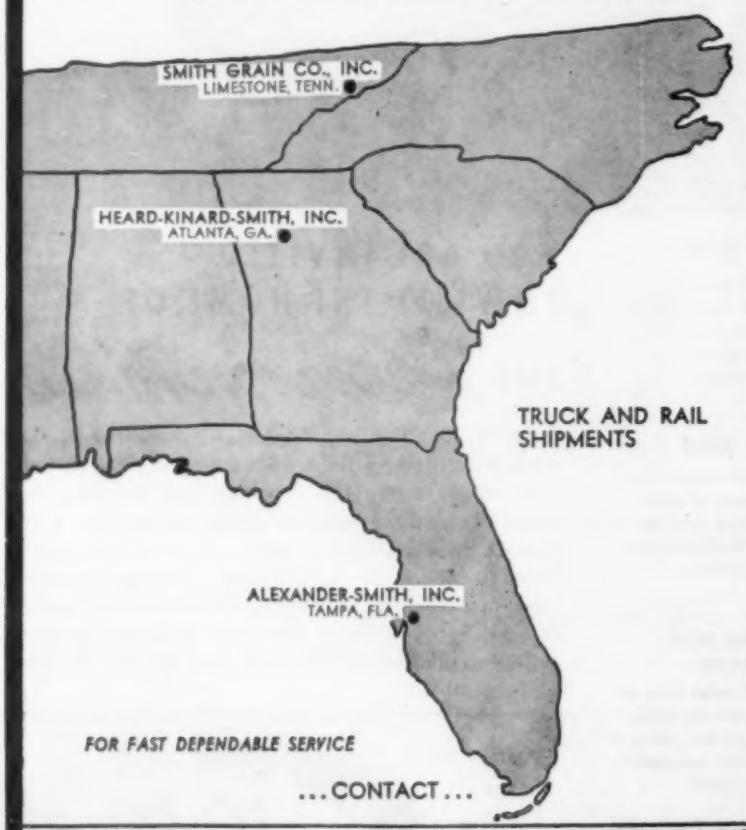
Order from your distributor . . . or write to us.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

● *Serving the* **FEED INDUSTRY** *in the* **SOUTHEAST**

GRAINS — GRAIN PRODUCTS — PROTEIN MEALS
CITRUS AND BEET PULPS — FEED INGREDIENTS

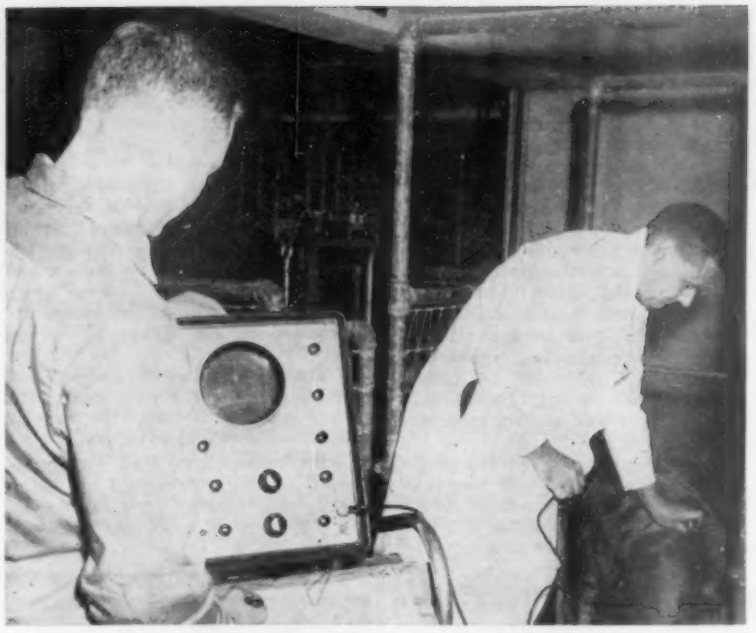


FOR FAST DEPENDABLE SERVICE

...CONTACT...

HEARD-KINARD-SMITH, INC.	SMITH GRAIN CO., INC.	ALEXANDER-SMITH, INC.
3240 PEACHTREE ROAD ATLANTA, GA. PHONE CE. 3-5378	LIMESTONE, TENN. PHONE 2660	915 S. WATER ST. TAMPA 2, FLA. PHONE: 20827

LUKE HEARD • WILL KINARD • BILL SMITH • BOB ALEXANDER
"SERVICE IS OUR CHIEF PRODUCT"



ULTRASONIC PROBE—Scientists of the U.S. Department of Agriculture's research service test an ultrasonic device for measuring backfat on a live hog. A reading of backfat thickness is taken from the oscilloscope of the electronic machine. Equipping the scope with a camera makes it possible to record the tissue depth photographically for future reference.

Device Measures Carcass Quality With Ultrasonics

WASHINGTON—An electronic device that can determine the depth of backfat and depth and width of loin eye muscles in cattle and hogs by employing high-frequency sound waves has been devised by U.S. Department of Agriculture scientists.

The USDA scientists say the device may prove highly beneficial in livestock marketing and breeding, and that the measurements are particularly important in selecting meat animals that produce a high percentage of their weight in the more desirable cuts.

Dr. Richard L. Hiner, head of meat-quality studies for USDA's Agricultural Research Service at Beltsville, Md., says that ultrasonic waves go through tissue without harm to the animal. The time needed for these sound waves to penetrate and bounce back from the interfaces or borderlines between fat, lean and bone varies with distance or depth. The device uses these time differences to determine the depths of the various interfaces.

The nautical apparatus known as Sonar acts on the same principle to find objects in water. An electronic device similar to the one now being tested at Beltsville is used by manufacturing firms to find flaws or faults in metals.

Preliminary tests of the device are being conducted by USDA animal husbandmen and agricultural engineers. So far, comparisons of animals measured by ultrasonics before slaughter with actual measurements of the dressed carcasses show a high degree of accuracy for the experimental apparatus.

Possible Uses

If continued tests prove the device's accuracy, it may be helpful in selecting and grading hogs and beef cattle before fattening or slaughter. It might be used by feeders to separate groups of animals into grades to insure proper finish for slaughter, and thus improve the uniformity of marketed livestock, a USDA report declared.

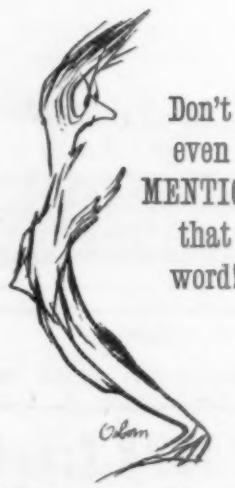
The appearance of live cattle or hogs may not give a dependable indication of the percentage of fat and lean meat they will yield when slaughtered. Many animals show meat type characteristics outwardly, but are found on slaughter to contain a high percentage of fat and to yield little lean meat.

USDA scientists also see the use of this type of electronic device as a great aid in increasing the effectiveness of breeding programs. The increased accuracy it would permit in the selection of meat-type breeding stock would reduce significantly the time needed to produce superior lines. It would also result in a substantial saving of time needed to measure, probe and judge individual animals by prevailing methods.

This new ultrasonic measuring device has not proved feasible for sheep because of their fleece. Contact with the animal's skin is necessary for accurate readings. Such skin contact is fairly easy with cattle and hogs.

OPENS FEED STORE

NEW ULM, MINN.—The Fred Fritsche Feed Service has opened a store here.



"Frightened to death" is no figure of speech where cancer is concerned. Each year thousands of Americans lose their lives **needlessly** because they were too terrified about cancer to even learn facts which could have saved their lives! Learn how to protect yourself and your family by writing to "Cancer," c/o your local post office.

American Cancer Society

Almost everybody who brings problems to Bemis (where flexible packaging ideas are born) likes the flexible solutions that Bemis creates out of 100-year experience, skill and just plain flexible imagination.

LOOKS ARE FINE . . . BUT MONEY'S FINER! You get both, though, when you package your feed in Bemis "Edge-Lock Seam" Burlap Bags. "Edge-Lock" ends raveling, adds several extra trips to each bag, cuts your bag cost. A neater, better selling package, too. Actually a MUST for a successful return bag program. P. S.—No loose yarns to get in the feed. Your customers love this!

Bemis

BEMIS BRO. BAG CO.

Bemis may already be making the better package you need. Call, write, or ask your Bemis man.

South Dakota Reports Results of First Year Of Swine Evaluation

BROOKINGS, S.D. — Seventy-nine per cent of the boars and 50 per cent of the barrows on test in South Dakota's newly-established swine evaluation station here have passed rigid standards leading to certification.

Results of the first testing cycle of animals ever run through the station were just announced by L. J. Kortan, secretary-treasurer of the South Dakota Swine Improvement Assn.

Mr. Kortan said that the certified boars averaged $148.77 when sold out as meat-type swine breeding stock following the test. Barrows were butchered to determine final certification ratings.

The station was started last May by the association as part of a program to encourage more meat-type hog production in South Dakota. At that time, 24 swine producers, representing eight breeds, consigned four animals each to the test.

Each entry consisted of boars from three different litters and a barrow which was litter mate to one of the boars. Pigs weighed from 35 to 50 lb. at start of test, 200 lb. at the end.

Growth rate and feed efficiency were recorded on a full-fed mixed ration of corn and supplement. In addition, a backfat probe was made near the end of the test.

These three factors and an index derived from them measured whether or not the boars were eligible for sale as breeding stock.

To be eligible, boars had to gain at least 1.60 lb. daily, had to require less than 3.35 lb. of feed for each pound of gain, measure less than 1.50 in. of backfat, and have an index of 100 or better. If a boar failed to meet any single factor, it was not eligible for sale.

High quality of the 72 boars on test can be seen from the averages. Rate of gain average for the total was 1.86 lb. daily. Pounds of feed per pound of gain averaged 3.00. Backfat depth averaged 1.22 in., and index average was 114.

A pen of three Yorkshire boars had the highest index average, 139.

Barrow certification requirements depended on length of animal, backfat depth and loin eye area. Failure to meet any one factor disqualified the animal for certification.

Average of the 24 barrows on test, with certification requirements in parentheses, shows: Length 29.4 (28.5 in.); backfat depth 1.58 (1.60 in.); and loin eye area 4.21 (3.50 sq. in.). Per cent of four lean cuts averaged 51.99.

The testing station is being operated by a 14-man advisory committee of the South Dakota Swine Improvement Assn., with advice and counsel from swine specialists at South Dakota State College.

Mr. Kortan, in addition to being secretary-treasurer of the group, is also associate extension livestock specialist at the college.

Colorado Reports Sales Of Commercial Feeds

DENVER — The Colorado Department of Agriculture announced recently that 162,150.50 tons of commercial feedstuffs have been reported as sold in Colorado during the first six months of the calendar year, 1958.

Poultry feeds and beef and sheep feeds dominated the sales. Following is the table released by the department:

Tonnage of Commercial Feedstuffs Reported by Manufacturers as Sold in Colorado—Released by Colorado Department of Agriculture—Jan. 1, 1958, to June 30, 1958.

Type of feed:	Tons
Cottonseed meal or pellets	14,423.09
Linseed meal or pellets	426.88
Soybean meal or pellets	6,472.71
Brewers and distillers products	3,331.45
Packing house by-products	2,967.20
Mineral feeds	2,169.90
Poultry feeds and concentrates (Except broiler or turkey)	24,522.83
Broiler feeds (all types)	1,515.16
Turkey feeds	8,264.68
Turkey concentrates	1,125.64
Dairy feeds	9,388.95
Dairy concentrates	2,149.39
Hog feed	1,330.34
Hog concentrates	1,094.22
Beef and sheep (all types)	26,495.80
Scratch	2,105.96
Pet foods	9,332.08
Dehydrated alfalfa meal or pellets	7,724.81
Miscellaneous	37,309.41
Total tons	162,150.50

New Price Schedule Announced by PENB

CHICAGO — The Poultry & Egg National Board has announced the release of its new price list for all educational and merchandising materials. The revised price schedule became effective Nov. 1, 1958.

The pricing of all materials to include shipping charges is a major change in the new schedule. The board points out that this will result in faster and more efficient service to the industry. Many items also carry a notation that special large quantity prices are available. Commercial organizations and trade associations should check these prices when planning full-scale promotional events.

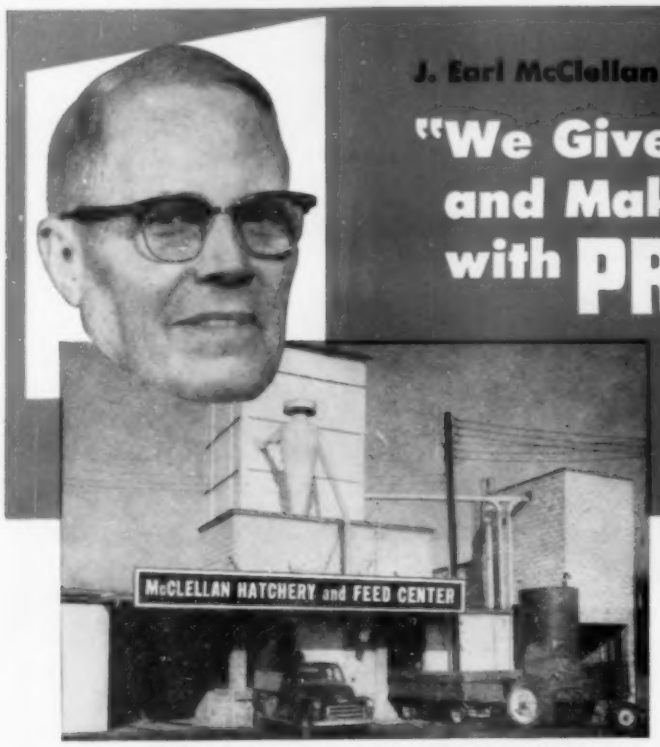
Forty-three items produced by PENB covering eggs, broilers, and turkeys are listed in the new schedule. Each item is covered by a complete description.

Sorghum to Argentina

MINNEAPOLIS — Hybrid grain sorghum, currently experiencing a phenomenal production boom in the U.S., will soon be growing in Argentina for the first time in that country's history. Cargill Hybrids, field seed producing department of Cargill, Inc., Minneapolis grain firm, has shipped the first hybrid sorghum seed ever to be admitted for import by the South American country.

J. Earl McClellan of Xenia, Ohio, says:

"We Give Better Service and Make More Money with PRATER"



View of McClellan Hatchery and Feed Center at Xenia, Ohio. Mr. J. Earl McClellan, Owner and Manager.

"... in our new plant, we installed the following PRATER Blue Streak Equipment: 5ACP Mill, two 2-ton Twin Spiral Mixers, Double Chain Drag Feeders, 3D Cob Crusher and Blower, Screw Conveyor and Truck Hoist.

"Prior to the operation of the new plant, our estimated annual Grinding income was $5,250.00; with our new Granular Grind story, 1956 grinding income reached $17,893.10. In addition, due to our increased service accommodations, our sales volume on profit-making concentrates showed a proportionate rise."

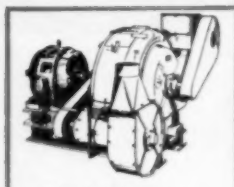
You, too, will find it pays to automate your mill with PRATER. Custom engineered for efficiency and profit, Blue Streak equipment is an investment in steady, daily dividends.

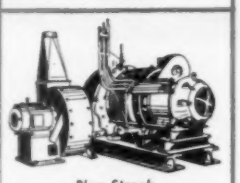
Actual mill surveys *prove* the PRATER Profit Story! We want to send you the facts and figures. Write today.

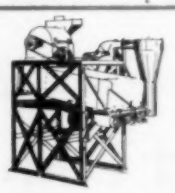
PRATER PULVERIZER COMPANY

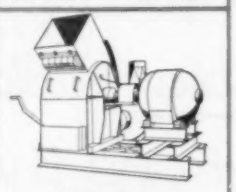
1537 S. 55th Court • Chicago 50, Illinois

Prater Design and Engineering Service

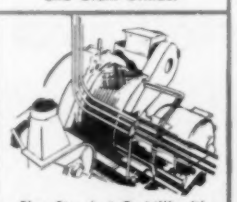

Blue Streak Advance Custom Mill

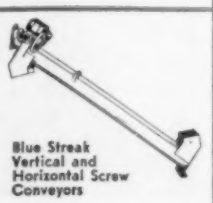

Blue Streak Dual-Power A.C. Mill with Pratermatic Screen Changer

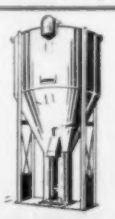

Blue Streak Corn Cutter

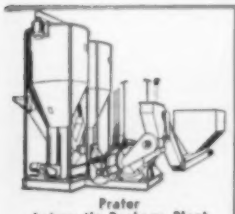

Blue Streak Hay and Grain Grinder

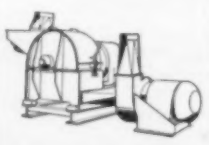
Blue Streak Double Chain Drag Feeder

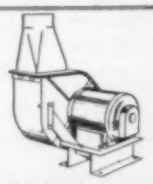

Blue Streak A.C. Mill with Pratermatic Screen Changer


Blue Streak Vertical and Horizontal Screw Conveyors


Blue Streak Twin Spiral Mixer


Prater Automatic Package Plant


Prater Fibre Grinder for Commercial Mills


Blue Streak Grain and Attrition Mill Blower

BLUE STREAK Prater

FARMERS FRIEND MINERAL FEED

WRITE FOR DELIVERED PRICES

FARMERS FRIEND MINERAL CO.

NAPOLEON, OHIO

FISH MEAL · FISH SOLUBLES

LIVER MEAL—VITAMIN OILS

FEATHER MEAL—FEED INGREDIENTS

ALBUMINA SUPPLY CO., INC.

82 Beaver St., New York 5, N. Y.

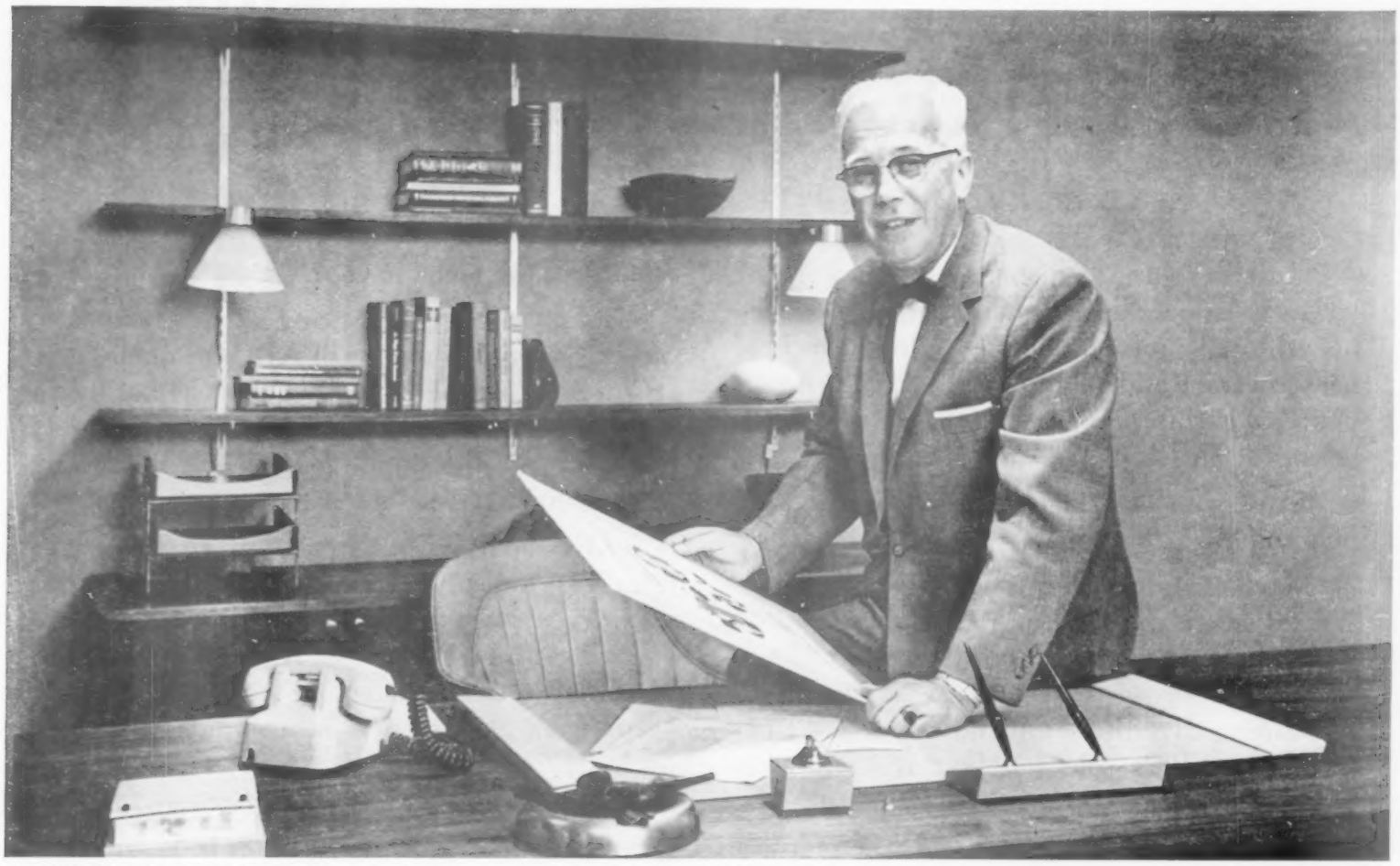
Fleischmann's F·I·D·Y

IRRADIATED DRY YEAST

RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

"Aggressive feed dealers are profiting from Quaker's modern advertising and merchandising programs,"

says **A. A. DENNERLEIN,** *Manager of Ful-O-Pep Feed Advertising and Merchandising of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*



A. A. DENNERLEIN joined The Quaker Oats Company in 1925 as a Poultry Specialist in the Feed Sales Department upon graduation from the University of Wisconsin. "Denny" was promoted to manager of Ful-O-Pep Feed Advertising in 1950 and manager of Ful-O-Pep Feed Advertising and Merchandising in 1956.

"I'm glad to have this opportunity to bring you up-to-date on our modern advertising and merchandising programs.

"It's a pleasant task for me, because over the past 33 years I have seen what advertising can do to help Ful-O-Pep Dealers grow and prosper.

"*Ful-O-Pep trade-mark is one of the best known.* Ful-O-Pep Feeds have been advertised continuously since 1917. For 15 years, Ful-O-Pep advertising penetrated farm homes with the popular radio program, 'Man On The Farm.'

"However, we here at The Quaker Oats Company don't have much time to reminisce about the past because the feed business is changing and moving ahead too rapidly for that. We are constantly revaluating our markets and changing our advertising and merchandising strategy to meet the changing times.

"*Quaker promotes meat-type hogs.* The Quaker Oats Company is vitally interested in cooperating with the pork producer to improve the quality of pork and to help your customers receive a better price for their hogs. As an incentive, The Quaker Oats Company is offering qualified feeders a bonus or a premium for Ful-O-Pep fed hogs.

"*Ful-O-Pep has quality egg program, too.* Quaker is promoting a quality egg production program whereby the egg producer, feed dealer, feed manufacturer and the egg buyer can — working as a team — produce finer quality hatching and top quality market eggs for specified markets. Both of these modern programs are currently being promoted in several markets.

"*Advertising is tailored to fit your store.* As you know, the major share of our advertising dollar is spent at the local level. We know that by localizing our advertising and pin-pointing our efforts to your store, we can serve you better. When you become identified with Ful-O-Pep your Ful-O-Pep District Representative will help you plan local advertising, special events, product and live displays, and direct mail, so that it will get maximum results in your own sales territory.

"We invite you to find out more about Quaker's modern advertising and merchandising programs and how they are helping your customers sell more meat, milk and eggs — how they can help you increase your feed sales and profits, too."

Arm A. Dennerlein

FUL-O-PEP FEEDS

made by The Quaker Oats Company

We invite Feed Dealers to visit our modern Feed Mills located at: Cedar Rapids, Ia. Memphis, Tenn. • St. Joseph, Mo. • Sherman, Tex. • Shiremanstown, Pa. • Lawrenceburg, Ind. • Chattanooga, Tenn. • Tampa, Fla. • Asheville, N. C. • Jasper, Ala. • Los Angeles, Calif.

In publishing, as in the formula feed industry,

Measurements are important

AUDITED PAID CIRCULATION ABC

Just as feed ingredients must be accurately weighed, so does a publisher carefully calculate his editorial "mixture." The right balance of news coverage and quality feature articles means high readership. Miscues mean loss of reader interest.

And you, the reader, are all-important in publishing.

To measure reader interest there is a professionally accepted "scale." The weighing is done by an independent non-profit organization—Audit Bureau of Circulations serving 3,485 publishers, advertisers and advertising agency members. ABC's sole function is to measure PAID circulation by uniform standards.

Their methods are precise and exacting. You may have received a letter from them asking when you subscribed, how much you paid and whether any premium was offered as an inducement to subscribe. They do this to double check our records. Feedstuffs checked out with flying colors.

What does this mean to you?

Simply this, by submitting Feedstuffs to the supervision and discipline of ABC the publishers affirm in the strongest manner possible that their primary obligation is to Feedstuffs readers and that they owe the standing of their publication to the voluntary demand of those readers.

ABC analysis of circulation and renewal rates is an indication of how well our editors are doing their job . . . whether they are meeting your need for business news. It keeps them aware of industry trends affecting your business. It keeps them alert to new ideas which you may profitably adopt.

ABC audits mean proving to you every week of the year that your subscription to Feedstuffs is well worth the price. Your subscription is a vote of confidence for our editors. And the balloting is watched closely by advertisers since the ABC symbol means to them that Feedstuffs is giving them what they are paying for . . . reader interest and confidence.

FEEDSTUFFS

The weekly newspaper of the formula feed industry

THE MILLER PUBLISHING COMPANY . . . *Specializing in business journalism since 1873*

2501 Wayzata Blvd., Minneapolis, Minn.

BRANCH OFFICES

Eastern States
Murray Hill 2-2185
551 Fifth Ave.
New York 17, New York

Central States
Harrison 7-0515
141 W. Jackson Blvd.
Chicago 4, Ill.

Southwestern States
Victor 2-1350
Board of Trade Bldg.
Kansas City 5, Mo.

Northwestern States
Franklin 4-5200
P.O. Box 67
Minneapolis 40, Minn.

POULTRY CONGRESS SCENES—Here are a few pictures taken at the recent 11th World's Poultry Congress in Mexico City. Among the group in the first picture is Ed Glennon, president of the American Feed Manufacturers Assn. At his left are Dr. Lauro Oltega, undersecretary of agriculture of Mexico, and Robert Hogue, coordinator of all American interests at the Congress. In the second picture are (left to right): Dr. Milton Scott, Cornell University; Sr. Luis Cuevas, Malta, S.A. (the big feed mill which opened in Mexico Sept. 24); Dr. Russell Couch, Texas A&M College, and Sr. Guillermo Jiminez, sales manager of Malta. In the third picture, posed in front of the exhibit of the Amburgo Co., Inc., Philadelphia, are Samuel M. Golden, president of the firm; Dr. Luis Topeta, Melesses y Derivados, feed manufacturing firm at Guadalajara, and Dr. Hollis Brower, Dow Chemical Co., Midland, Mich. In the last picture are Mr. and Mrs. Tommy Thompson, Ray Ewing Co., Pasadena, Cal. (These pictures were taken by Mr. Golden.)

NOW...4 ways better

KELLY DUPLEX

VERTICAL FEED MIXER

NEW MOTOR MOUNT

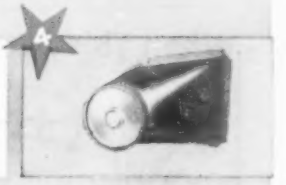
More versatile because it can be used on either side of the mixer—will accommodate motors of various sizes. More practical because it makes belt take-up easier.

NEW INSPECTION DOOR

Gives you easy, instant access to mixing chamber. Provides an extra inspection window. Makes practical the use of hardened, bolt-on agitators. Available at extra cost.

NEW DUST-PROOF BAGGER

Designed to bring greater ease and efficiency to your sacking operation. Leaves no telltale dust deposits on mixer. Helps keep your mill clean.



NEW HOPPER BOTTOM and bearing housing.

Has bolted construction for easier access to working parts. Saves you time and money when maintenance is required.

It's no secret why—over the years—the Kelly Duplex Vertical Feed Mixer has been such a favorite with feed mill and elevator operators all over the country.

The Kelly Duplex is unconditionally guaranteed to mix more feed with the same power than any other machine on the market—and to produce a mixture so evenly and thoroughly blended that it will stand the most rigid inspection. A complete batch can be loaded, mixed and sacked in less than fifteen minutes.

Constructed of heavy, arc welded steel—the Kelly Duplex completely eliminates feed loss, is practically noiseless in operation, and is so liberally rated that owner after owner reports it will hold up to twice its stated capacity.

Now, with a new motor mount, a new inspection door, a new bagger, and a new hopper bottom and bearing housing—the Kelly Duplex Vertical Feed Mixer is 4 ways better than ever before—and, more than ever before, is your one best mixer buy.

For top performance, lower maintenance, greater ease of handling and BIGGER PROFITS, you owe it to yourself to fully investigate this outstanding machine before you buy any feed mixer. Check and mail coupon today for full details.

CLIP ALONG THIS LINE . . . FOLD OVER, FASTEN . . . AND MAIL TODAY!

FIRST CLASS
Permit No. 72
(Sec. 34.9 P.L.&R.)
SPRINGFIELD, OHIO

VIA AIR MAIL

BUSINESS REPLY ENVELOPE
No postage necessary if mailed in the United States

— POSTAGE WILL BE PAID BY —

The Duplex Mill and Manufacturing Company
Springfield, Ohio

FOLD OVER ON THIS LINE . . . FASTEN (STAPLE, GLUE, TAPE)

The Duplex Mill & Mfg. Co.
Springfield, Ohio

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

Layout service and planning details available without cost.

- ☐ Vertical Feed Mixer
- ☐ Ear Corn Conveyor
- ☐ Vertical Screw Elevator
- ☐ Electric Truck Hoist
- ☐ Corn Cutter and Grader
- ☐ Corn Sheller with Blowers
- ☐ Pitless Corn Sheller
- ☐ Regular Corn Sheller
- ☐ Magnetic Separator
- ☐ Cob Crusher
- ☐ Bucket Elevator
- ☐ Chain Drag
- ☐ Twin Molasses Mixer
- ☐ Hammermill
- ☐ Corn Crusher-Regulator
- ☐ Grain Blower
- ☐ Corn Scalper
- ☐ Mill Blower
- ☐ Grain Feeder
- ☐ Electric Bag Cleaner
- ☐ Forced Air Carloader
- ☐ Complete Line Catalog

NAME .....

TITLE .....

FIRM ..... PHONE.....

CITY ..... STATE.....

Yes!

He's looking for some of your dog food made with our complete dog food cereals

★ TOASTED CORN FLAKES ★ KIBBLED CORN
★ TOASTED WHEAT FLAKES ★ KIBBLED WHEAT
★ CORN GRANULES ★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

Carloads — Truckloads — LCL — LTL

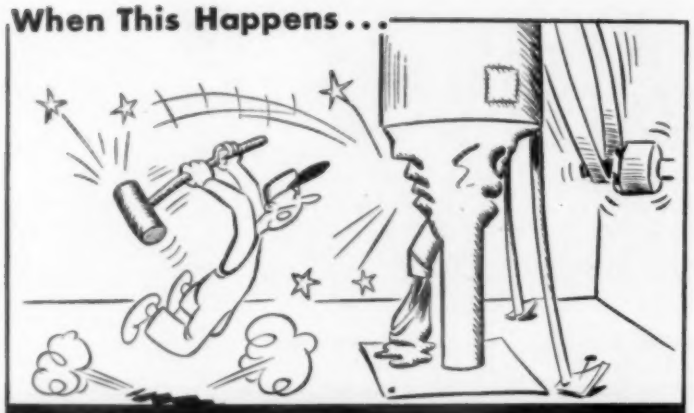
LAUHOFF GRAIN COMPANY

PHONE 1800 — *Cereals of Quality Since 1862* — Danville, Illinois — TELETYPE 8261

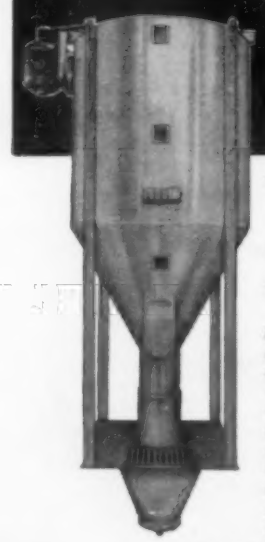
KEES & COMPANY

Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
227 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1528

When This Happens . . .



YOU NEED A FORDS VERTICAL MIXER



★ Designed For Fast Loading and Unloading *Without Bridging*
★ Thorough Uniform Mixing
★ Dust-Tight Positive Bagger

Special agitating arms prevent bridging and assures quick, clean emptying of mix. Easy to install and operate with present equipment. Loads top or bottom —clean, fast . . . no waste. "Flinger" at top of conveyor tube thoroughly distributes ingredients—cuts mixing time. Bagger has positive, non-jamming cut-off valve, operating in a dust-tight housing. Ball bearing equipped screw conveyor is "balanced" for quiet, smooth operation. Motor mounted as desired. All-steel, electric welded construction throughout. Available in 3 capacities: 2000, 3000 and 4000 lbs.

NATIONWIDE SALES AND SERVICE
Write for Literature and Name of Nearest Distributor

MS MYERS-SHERMAN COMPANY

1801 S. ILLINOIS STREET • STREATOR, ILLINOIS

TURKEY BUSINESS

(Continued from page 44)

turkeys. They can capitalize on this marketing advantage, however, only if they produce the kind of turkey that market wants. There is no school lunch program, no legislation, no enabling act that will enable the turkey industry to sell 30-lb. toms to America's housewives. None of these moves can be looked upon as a complete answer to a turkey producer's problems. We must make moves now to produce turkeys in the sizes the housewife will buy, and at prices competitive with other meats on the supermarket shelf.

Recently, I read a report on "Why Consumers Buy." This report pointed out that when a housewife buys a product she does so for one of these reasons:

1. She buys it because it is simple and easy to prepare. Will she buy turkey for that reason?

2. She buys because her conscience prompts her to. For example, she buys fruit and fresh vegetables because she feels they are "good" for the family. Will her conscience bother her if she passes up turkey?

3. Or, she buys because the price is right. Now, let's put ourselves in the housewife's place. If we were spending the weekly paycheck and had a choice of a 20-lb. tom costing, say $7.80 or a 4-lb. beef roast for $3.99, which would we take? On the other hand, a nice 8 or 9-lb. hen costing $3.49 might ring the bell.

The trend in the years ahead will be toward production of family-sized turkeys. They will be produced in or near grain surplus areas. They will be produced relatively close to large consuming centers. They will be produced to fit a specific, pre-determined market. In other words, producers will no longer be producing turkeys for market, they will be producing turkeys for a market. And they will produce the sizes and quantity that market wants or it will look somewhere else for its source of supply.

Will integrated operators take over the production of turkeys?

That question can be answered this way: Integration will take over only so fast as producers let it take over.

If producers make no move to reduce the cost of their poults—if they make no move to select a turkey that is bred for fast growth and early maturity—if they are not the kind of operators who are continually conscious of pounds of feed consumed per pound of turkey meat—if they are not concerned with all of the moves necessary to produce a cheaper pound of turkey meat—if they are raising turkeys without a definite market in mind—then they are inviting integration. Because, the easy way out is to lease time and equipment to some integrator who will then make these decisions for you.

But, on the other hand, if producers will do the things for themselves that an integrated operator would force them to do, they can remain independent. It has been proved time and time again that a good sound independent producer will whip the pants off an integrated producer. Once you remove the personal satisfaction that comes from running your own business and remove the ultimate profit potential you no longer have the most efficient turkey producer.

I have always contended that a turkey producer is a different "breed of cats" than the broiler producer. That is why I contend there will always be successful independent operators in the turkey business.

New Husbandry Techniques

What new husbandry techniques will be applied to the turkey business?

1. Turkey breeding will shift to a new emphasis on first generation hatching stock. Poultry raisers are well aware of the Vantresses, the Petersons, the Nichols, the Arbor Acres and others in the chicken broiler business. Similar breeding programs are already here or just around the corner in the turkey business. The day will come when hybrid turkeys will be raised. The grower will receive all of the benefits of hybrid vigor, uniformity, low feed conversions and rapid growth, disease resistance, and a host of other factors.

More breeders will be kept and poults will be hatched on location. The day is fast disappearing when either commercial eggs or poults will be shipped long distances. Hatcherymen will no longer hatch poults in tremendous volumes and hope the demand is good. Instead, they will place emphasis on producing a better quality poult at the lowest possible cost for a local poult market.

2. The trend is toward complete feeding programs. This does not mean, necessarily, that producers in grain surplus areas will buy complete feeds from some distant point. But, it means that the turkey itself will be fed a complete ration even if it is made from a balancer or concentrate.

Also, you will see more sexing of turkeys practiced. Recent tests indicate that hens and toms require different levels of protein and energy. So it is likely that there will be different feeds and feeding programs applied to hens and toms.

Feed Efficiency

The next few years will bring amazing developments in feed efficiency. A test feed at Oklahoma State University produced 24-lb. toms on an average of 2.27 lb. of feed per pound of gain, and 12-lb. hens in 19 weeks on 2.1 lb. of feed per pound of turkey produced. The formulas used are impractical from a cost standpoint at the present time, but ways will be found to reduce the cost of these rations sufficiently to make them practical.

These improvements must be made. Competition in the meat business is breathing down the turkey producer's neck in no uncertain terms. The chicken broiler producer is producing a pound of broiler on 2.25 lb. of feed, the commercial duck grower is producing 7½-lb. ducks in seven weeks on 20 lb. of feed. The hog producer is producing a pound of pork on 4 lb. of feed—and with a relatively cheap feed.

We must never lose sight of the fact that we are in the meat business whether we're raising broilers,

SMELLS GOOD — Special guest at the annual fall chicken barbecue put on by Colorado State University's Poultry Club was Paul Brose (right) of Ft. Collins, executive secretary of the Colorado Egg Producers Assn. President of the Poultry Club this year is Ben Mather (second right), also of Ft. Collins, and treasurer is Charles Graznak of Denver (next). Poultry students at Colorado State are taught the fine points of chicken barbequeing, as part of their education, by Ted Hartung (left), CSU extension poultryman.

turkeys, hogs or beef. The meat we produce will go on the meat counter in competition with other meat. And the only way we will get our product sold is to have a better product—in an attractive package, in an assortment of sizes, and at a price competitive with other meat. As long as we keep our sights on the end product, a pound of turkey meat on the meat counter, we can keep our industry going down the right road.

100 Million Turkeys

Those are some of the trends and some of the considerations—some of the decisions—every turkey grower in Ohio must make to retain his competitive position in the turkey business. I know that a number of questions have been left unanswered. One question invariably asked is: "Don't you think the turkey business is being 'over-done'?" No, I don't think so. I think we will be producing 100 million turkeys a year by 1965. And, I think we will be selling some of them at prices that will make today's prices look mighty good by comparison. And, just as in any other business, the good operators will survive and the poor operators will fall by the wayside.

There's a simple economic fact we often overlook and that fact is this: The only way we can get more eggs, or broilers, or turkeys consumed is to raise more of them. We are dealing with a perishable food product. We will take some hard knocks on the way to producing 100 million turkeys. The trick to staying in business is to produce a cheaper pound of meat than your competitor, and do a better job of selling. And, whether we like it or not, we just happen to be living in that kind of a world.

Dairymen Boosting Output, Speaker Says

LANSING, MICH. — The dairy farmer is undergoing a change of the times as are many other areas of the U.S. economy—he's getting bigger, according to F. M. Skiver, head of the dairy division of the Michigan Department of Agriculture.

"He's getting bigger fast," Mr. Skiver said. "Although this has been going on for the past five or 10 years, it seems to be speeding up."

Mr. Skiver said he thinks many dairy farmers are handling milk in larger quantities to reduce labor costs. To do this, they need labor-saving devices and equipment which are generally so costly it is necessary for the dairyman to use them to the maximum to get his value out of them.

Many smaller operators will stay in the business regardless of the trend, Mr. Skiver said, but their profits may be cut.

Morea Representative For Overseas Named

CRETE, NEB. — The appointment of Porter International Co., Washington, as overseas representative for licensing and development of Morea liquid feeds has been anncunced by Philip C. Anderson, president, Feed Service Corp., Crete.

The company is currently being granted patents in a number of foreign countries for liquid feed supplements containing ethanol, the announcement said.

Paul R. Porter, president of the Washington company, said the fact that Morea liquid feeds are designed to be fed with locally-grown roughages and other feedstuffs is important in countries where available feedstuffs are largely low-cost cellulosic roughage materials.

The Porter International Co. will serve as agent for Feed Service Corp. in 49 foreign countries.

BUSINESS MANAGEMENT CONSULTANTS

Progressive companies, large and small, are finding it highly profitable for them to have studies and analysis made regularly by experienced consultants.

Our staff with years of experience can assist you with—
Financial Studies — Plans — Schedules — Budgets — Credit and Working Capital Controls
Costs — Margins — Profits
Organization Plans — Administration Programs

Call or Write for a Personal Conference

JAMES H. BURRELL & COMPANY, INC.
3615 Olive Street Phone—JEfferson 5-0715 St. Louis 8, Mo.

HONEGGER DEALERS PROFIT from the BIG FRANCHISE

BIG 4 HONEGGERS EXCLUSIVE PACKAGE

Franchises available in some areas
WRITE, WIRE or PHONE
Honeggers' & Co., Inc.
Fairbury, Illinois

FEED
CHIX
FARM BUILDINGS
EQUIPMENT

FEED NUTRITIONISTS, *we leave it to you:*

Can you cut ingredient costs with Torafeed yeast at 8½¢ a pound?*

***Compare these yeast analysis figures from* FEEDSTUFFS'**
1957 table with Torafeed analysis from* RED STAR *laboratories

NUTRITIONAL FACTORS	Regular Brewers Dried Yeast	Regular Torula Dried Yeast	Red Star Torafeed Averages	Check here values most important to you and ask yourself if Torafeed isn't your best value source.
Protein	45% min.	48% min.	51.5%	
Fat	1.0% min.	2.0% min.	4.8%	
Fiber	2.7% max.	2.7% max.	0.5%	
Riboflavin mg. per lb.	15	20	28.5	
Niacin mg. per lb.	203	220	252	
Pantothenic acid mg. per lb.	50	24	26	
Choline mg. per lb.	1750	1300	1270	
Folic Acid mg. per lb.	4.4	10	9.1	
Arginine	2.2%	2.6%	3.6%	
Lysine	3.0%	3.8%	4.1%	
Methionine	1.0%	.80%	.80%	
Cystine	.50%	.60%	.70%	
Tryptophane	.81%	.50%	.70%	
Glycine	1.7%	0.2%	2.4%	

See why more and more nutritionists are specifying Red Star Torafeed

The chart above—along with the price schedule at the right—explains the rapid growth of Red Star Torafeed yeast. Check the food factors most important to you, then compare Red Star Torafeed prices with the amount you are currently paying. This will give you the approximate saving you can make for your company by using Torafeed.

Where to save money with Torafeed

CATTLE FEED—Tests at Ames, Iowa, showed that torula yeast stimulated rumen bacteria, producing greater weight gains per pound of feed, in less time for less money, and gave a greater number of animals grading choice.

MINK FEED—Michigan State University experiment reports show torula yeast gives excellent results.

PET FOODS—As a protein replacement (see above chart), Torafeed is high in quality and low in price.

FISH FOODS—Reports at an Animal Nutrition Research Council meeting showed torula was by far the most economical yeast to use in fish food.

Send for* FREE *sample

Write today for a free sample of Red Star Torafeed (dried torula yeast). If you mention the types of feed you manufacture, we will send you research reports relating to your area of interest. Address inquiries to Red Star Yeast & Products Co., Department F, Milwaukee 1, Wisconsin.

***USE THESE TORAFEED PRICES To Figure Your *Savings*:**

The exact price you pay for Red Star Torafeed (dried torula yeast) depends on your location, and on the quantities purchased. Prices here are F.O.B. Green Bay, Wisconsin—Net 10 Days. Freight equalized with nearest producing point. Packed in 50-lb. multi-walled paper bags. Torafeed is not a by-product. It has consistent quality throughout the year. The price and the supply are steady.

	Price per Pound
Carlot (40,000 lbs. minimum)	8½¢
Trucklot (20,000 lbs. minimum)	8½¢
10,000—19,950 lbs.	8¾¢
2,500—9,950 lbs.	9¼¢
2,450 lbs. or less	10¢

Torafeed Guaranteed Analysis

Protein (crude) ..... min. 45% Moisture ..... max. 8%
Fat ..... min. 3.5% Ash ..... max. 9%
Fiber ..... max. 1.5%

RED STAR
YEAST & PRODUCTS CO.
MILWAUKEE 1, WISCONSIN

The
HIDDEN
VALUE
In Thousands of
BETTER RATIONS
BARTON
Trace Mineral
Salt
FEED DEALERS—
There's a ready market and year 'round demand for salt and minerals. Keep plenty of BARTON salt on hand. Available in bags or blocks . . . plain or mineralized.
THE BARTON SALT COMPANY
HUTCHINSON KANSAS
When your formula calls for trace minerals, there's no easier, surer, less expensive way to provide them than to include BARTON Trace Mineral Salt. BARTON salts flow freely, mix readily and provide the level of mineral supplementation you need. The BARTON blend of pure evaporated salt, manganese, iron, cobalt, calcium, copper and iodine provide the "Hidden Value" that gives your formula the extra margin of performance.
2
The salt cellar of America

BUY and SELL through WANT ADS

Reduced Crop Supports Add Value to Efficient Farms, Feed Man Says

SIOUX CITY, IOWA — Reduced emphasis on farm support prices will place a premium on well-managed, highly productive farming operations, according to James C. North, president of Nutrena Mills, Inc., Minneapolis.

Mr. North told guests at the annual Soil Conservation banquet that present farm policies are aimed at "building a truly free and competitive agriculture" that will "retire those tracts of land that either should not have been farmed in the first place or have been farmed unwisely and so require extended rehabilitation to support an efficient operation."

Mr. North, whose firm is a subsidiary of Cargill, Inc., said farms where soil conservation has been practiced and efficient production developed "will be the permanent core of our agricultural economy."

The importance of the feed industry, Mr. North said, lies in enabling farmers to conserve "time, human effort, money and the values that are contained in grain, meat, milk and other products of the farm." He pointed to the increasing use of bulk feed and automatic feeding systems on farms, the use of "complete" feeds rather than home-grown rations, the development of production systems such as Nutrena's Pigloo system for swine raising, and constant research and improvement of feed formulas, as marks of the industry's success in helping the farmer.

Describing the over-all services of agricultural industry, he said: "Industrial firms, in the course of familiarizing the public with their products, do an extraordinary amount of educating, informing and otherwise assisting. Tractor companies conduct free courses in operating their machinery, grain firms and meat packers provide daily market quotations, country and terminal elevators make free moisture and soil analyses, seed and fertilizer producers send technicians to farms to make sure their products are properly used.

"The feed industry, in the area of farm information and assistance, is one of the nation's most active. Even small firms do their utmost to help customers produce profitably, and larger firms undertake nationwide programs to accomplish the same profitable end."

D. O. Andreas Heads Chemurgic Council

NEW YORK—Dwayne O. Andreas has been elected president of The Chemurgic Council, announced Wheeler McMillen, vice president of the Farm Journal and chairman of the council.

Mr. Andreas, who is chairman of the Honeymead Products Co., Mankato, Minn., is in charge of the vegetable oil operations for the Honeymead firm.

He is also a member of the executive committee of the National Soybean Processors Assn., chairman of the trade development committee of the Soybean Council of America, secretary of the fats and oils advisory committee of the U.S. Department of Agriculture, president of the Andreas Foundation and member of the Chicago Board of Trade and the Minneapolis Grain Exchange.

The Chemurgic Council promotes research to develop markets and uses for agricultural products and new crops for areas now producing surpluses.

According to Mr. Andreas, his acceptance of the president's post was made on the condition that Mr. McMillen continue as chairman of the board and John W. Ticknor as treasurer.

15 New Dealers

FAIRBURY, ILL. — Honeggers' & Co., Inc., Fairbury, has announced 15 new dealers who will handle the complete line of products manufactured by the firm, including feeds, Honegger layers and farm buildings and equipment.

Included are five dealers in Nebraska, four in Iowa, three in Illinois, two in Indiana and one in Ohio.

FEED MILL SOLD

BARABOO, WIS. — Lloyd Bender and Merrell Vertein, North Freedom, Wis., have purchased the Carpenter Feed Mill here from Floyd Carpenter. Mr. Vertein will manage the Baraboo mill, while Mr. Bender will continue to manage the mill in North Freedom.

THE MEANEST MAN IN THE WORLD

. . . is the cancer quack, the man who claims he has a "secret cure" for cancer. There is no "secret cure" for cancer. But many cancers *can* be cured if detected and treated in their early stages by a qualified physician.

See your doctor regularly. Give him the chance to give *you* the chance of a lifetime. Ask your local American Cancer Society office for a copy of its anti-quack pamphlet, *"I Have a Secret Cure for Cancer."*

American Cancer Society

*Precision Reproduction

A complete, experienced "Background" in quality controlled printing guarantees clean, accurate reproduction of trademarks and company identification for every Raymond Multiwall customer. Creative developments such as Raymond Background Printing give added sales impact. Check the important advantages of Raymond "Background" printing with your Raymond Representative. He'll be glad to show you how they can work for you.

Special Problem? New multiwall developments may be the answer. Write Raymond Bag Corporation, Research & Development Division, Middletown, Ohio.

Raymond
BAG CORPORATION
A division of Albemarle Paper Mfg. Co.
MIDDLETOWN, OHIO • RICHMOND, VA.

It Pays To Sell VITALITY Dog Food

1. No Cut Throat Competition

Never a loss leader—Staley's Vitality is sold through feed, pet and independent stores. You get a better than average markup **all the time** on **every bag!**

2. EASIER Quantity Discounts

Vitality and Staley's—the only **complete** line (Kibbled, Whole Biscuit, Instant, Granular, Cubes, Homogenized, Meal, and Bites) of nationally advertised dog foods from a single source in **one** shipment. Saves multiple ordering . . . eliminates unbalanced stocks . . . adds up to quantity discounts quicker.

3. EASIER To Sell

Vitality is the best known and most respected brand with men who buy dog food in big quantities. National and local advertising and field trial promotions keep Vitality moving. It's the only dog food with "Specialized Diets" to fit the individual needs of each dog—hunter or pet. Staley's Vitality fits in with your business as a "feed" man.

A. E. STALEY MFG. CO., Decatur, Illinois

CHECKERBOARD GRAIN COMPANY

Buyers and Sellers
of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS

CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

ARID-AIRE

THE ONLY GRAIN DRYER AVAILABLE ON A TRIAL PLAN

THE BEST WAY TO FIND OUT IF YOUR BUSINESS WILL JUSTIFY A GRAIN DRYER INVESTMENT IS TO TRY ONE. INVESTIGATE ARID-AIRE'S TRIAL PROGRAM

Exclusive ARID-AIRE design features are unmatched by any other dryer

- Automatic, self-operating. No loading, unloading or operating attendance required.
- Heavy insulation increases drying efficiency, saves fuel dollars . . . lowers operating costs.
- Self-cleaning — saves time and labor.
- Horizontal design is more efficient and trouble-free — no pressure, no packing, no clogging.
- Delivered completely assembled, ready for fuel and electric connections.
- Safest dryer made — based on ratings made by leading insurance companies.

ARID-AIRE is priced to save you money and built to give you BIG capacity.
IT'S YOUR BEST GRAIN DRYER BUY.

Manufactured by

DAYCOM, INC.

Affiliated with *The* **DAY** *Company*
Dept. A, Flour Exchange Bldg.
Minneapolis 15, Minnesota

Gentlemen:
Please send literature and full details regarding ARID-AIRE's Trial Plan offer.

Name_____

Address_____

City_____ State_____

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

Dec. 4-5—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh, N.C.; chm., Dr. E. R. Barrick, Department of Animal Husbandry.

Dec. 5-6—Arkansas Turkey Federation; Arkansas Polytechnic College, Russellville, Ark.; exec. sec., Charles D. Hawks, P.O. Box 1146, Little Rock, Ark.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Bruce Poundstone, Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

• • •

Nov. 20—Ohio Grain, Feed & Farm Supply Marketing Conference; Ohio State University, Columbus; chm., Dr. John Sharp, Department of Agricultural Economics.

Nov. 21—Rutgers School for Poultry Servicemen; Rutgers University, Brunswick, N.J.; chm., John Bezpa, Extension Specialist in Poultry Husbandry.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Nov. 28-29—American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., H. H. Stonaker, Animal Husbandry Dept., Colorado State University, Fort Collins, Colo.

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

Dec. 3—Ontario Retail Feed Dealers Assn.; King Edward Sheraton Hotel, Toronto; sec., Murray H. McPhail, 60 Yonge St., Toronto 1, Ont., Canada.

Dec. 8-9 — Veterinarian-Nutrition Conference; President Hotel, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 20-21—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, North Dakota Poultry Improvement Board, Bismarck, N.D.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minne-

CALENDAR FOR 1958-59

NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY

S	M	T	W	T	F	S
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

apolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12—Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

Feb. 26—Illinois State Turkey Growers Assn.; Animal Sciences Laboratory, University of Illinois, Urbana, Ill.; sec., S. F. Ridlen, Poultry Extension Specialist.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nall, 1304 E. 7th St., Los Angeles.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. v. pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

College Says Herd Mix Enough for Calves

ST. PAUL — "Dairy calves don't need a complete 'starter' ration; a good, simple grain mixture and long hay like that given the rest of the herd is enough," a University of Minnesota news release states.

The report tells farmers that calves on a "herd" mix of 40 lb. ground shelled corn, 30 lb. ground oats, 20 lb. wheat bran and 10 lb. soybean meal outgained calves on a complete starter formula in Minnesota tests.

"The starter ration," said the university, "contained ground corn, soybean meal, ground alfalfa, molasses, wheat bran, beet pulp, salt, bone meal and a feed additive. It was similar to many ready-mixed starter formulas. This ration is 'complete,' while long hay was fed with the herd mix."

W. A. Olson and J. B. Williams said that they compared the herd mix with both pelleted starter and starter in meal form. The trial was conducted from birth to 84 days for each calf.

"Average gains for the entire trial," they reported, "were: Calves on herd mix, 1.43 lb. daily; starter meal, 1.18 lb.; pelleted starter, .97 lb. daily. Calves on herd mix also outgained the other two groups during both the first and second half of the trial period.

"Another point from this study was that pelleted starter brought slower gains than starter in meal form. This has been found true in other tests, too."

Oregon Egg Law Changes Proposed

PORTLAND, ORE. — Several changes in the Oregon egg law have been proposed by the Oregon Poultry Council, following a meeting of that group recently. Members asked that the Oregon Department of Agriculture have the authority to audit any egg dealer's books or records to determine whether proper records are being kept and whether the fees required by law are being paid.

Another proposal concerned the change for tolerance in all egg grading from 15 to 20%. This would be in line with California and Washington tolerances.

The group also approved a proposal that would raise the egg sellers' annual fee from $2 to $5 along with a 3¢ a case maximum tax on all eggs a producer sells. Egg producers selling fewer than 200 cases a year would not be required to pay the tax.

The group also favored drawing up a legislative bill asking the state for an annual $12,000 appropriation to finance the Oregon State College poultry diagnostic laboratory.

Robert Alexander, assistant OSC director of agriculture, told the meeting that at the present time this program is being financed by money earmarked for research.

Vermont Instructor

BURLINGTON, VT. — Donald A. Klein has been appointed instructor of animal and dairy husbandry and research assistant at the University of Vermont College of Agriculture here, it has been announced by university trustees. Dr. David Racusen was named as assistant professor of agricultural biochemistry and assistant biochemist.

MORE GRANITE LESS DUST

SUPREME RI-STONE REG. U.S. PAT. OFF. SHARP-INSOLUBLE

GRANITE GRIT

FEED MERCHANTS Reap Greater Profits with the Fastest Growing Poultry Grit in America.

Ri-Stone promotes healthier birds, faster growth, lower feed costs. Your inquiries invited.

Get Ri-Stone in the economical 80 lb. bags. A size for all ages. Fine, Medium, Coarse and Turkey sizes.

Fine Aggregate Division

RION CRUSH STONE CORP., Rion, S. C.

QUARRIERS OF GRANITE FOR OVER 70 YEARS.

LA BUDDE

MILWAUKEE, WIS.

MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

Ray Ewing

VITAMIN A

is Still the MOST STABLE VITAMIN A you can use!

The Ray Ewing Company, Pasadena, California

J. H. LEFTWICH & CO., Inc.
BLACKSTRAP MOLASSES

Phone HEmlock 2-8771 Mobile, Ala. P.O. Box 78

Savannah, Ga. Jacksonville, Fla.
New Orleans, La. Corpus Christi, Texas
Tuscaloosa, Ala. Nebraska City, Neb.

Shipments by Rail Tank Car, Truck Transports and Barge

AUBREY FEED MILLS
RED **A** FEEDS
LOUISVILLE, KENTUCKY
SERVING THE GREAT SOUTHEAST

Coastal Bermuda Pellet Tests Show Better Daily Cattle Gains

MACON, GA. — Coastal Bermuda pellets continue to produce startling beef cattle daily gains as additional feeding trials are reported by the Georgia experiment station.

In trials conducted during the summer, beef cattle fed the Coastal Bermuda pellets made an average daily gain of 2.07 lb.—an increase over the 1 to 1¼ lb. which can be expected from conventional grazing of Coastal Bermuda, according to a number of experiments previously conducted in Georgia and other southern states.

"The data of this recent trial show that the feed performance of the pelleted Coastal Bermuda," said Dr. T. Hayden Rogers, head of the agronomy department at the University of Georgia, "was equal to that of pelleted high quality alfalfa. Not only were the daily gains equal but feed consumption and conversion ratios were almost equal.

"The daily intake of Coastal Bermuda pellets was 16.1 lb. and the feed conversion was 7.77, compared to a daily intake of the alfalfa pellets of 17.7 lb. with 7.71 as the feed conversion ratio."

The experiment began June 28 and was concluded Oct. 5 with duplicate lots of five steers each fed Coastal Bermuda pellets and alfalfa pellets. The 20 steers averaged 550 lb. each at the beginning of the 100-day test.

"The steers were weighed on three consecutive days at the beginning and end of the experiment," O. L. Brooks, associate agronomist and superintendent of the southeast station, explained.

"The three weights were averaged for the initial and final weights."

Additional tests of the pelleted grasses will be made, Dr. Rogers said. In this test, shade, water and mineral mix were available to the steers at all times. Other typical but varying southern conditions will be simulated as the research continues, he added.

HELP YOUR ROOSTER BE A CAD

LAFAYETTE, IND. — The rooster is a gentleman, according to Joe Sicer, Purdue University extension poultry specialist, and it sometimes costs not only the rooster, but the poultry producer as well.

When the rooster finds a choice morsel of feed, does he gobble it down?, Mr. Sicer asks. No, he calls the hens and stands back like a gentleman while the girls get their fill. If he is too gallant, he doesn't get sufficient feed himself, and he loses weight.

The answer is a small hopper on a post or the laying house wall at a height which allows only the taller male birds to eat out of it. Even a tin can will suffice, Mr. Sicer says.

The roosters will call the hens when they find the feed, but will eat and feed themselves when the calls bring no takers. Mr. Sicer fills the cockerel feeders with a complete ration—grain and mash.

SELLS INVENTORY

AUBURN, CAL. — The Galbreath Farm Supply Co., Auburn, recently sold its inventory. Holsclaw Feed & Fuel, Auburn, purchased the Galbreath farm products.

THE *Marion* MIXING and BLENDING ACTION
AN *EXCLUSIVE* DESIGN!

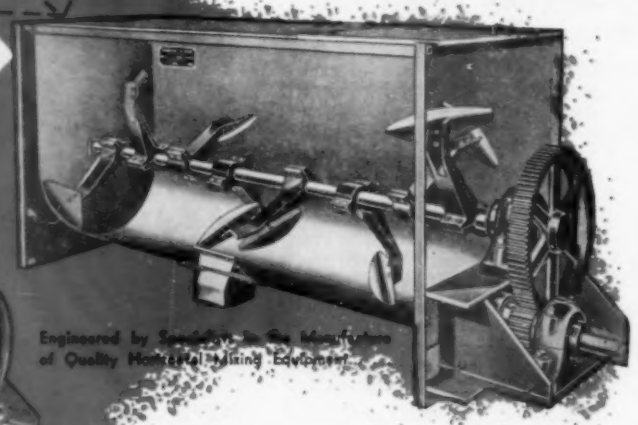
the Best Answer to any mixing problem!

MIXING:
• DRY FEEDS

BLENDING:
• MOLASSES • ANIMAL FATS
• FISH SOLUBLES
• OTHER LIQUID ADDITIVES

You need only one mixer in your plant or mill to satisfy all your mixing and blending requirements, the MARION MIXER. The Marion Mixer handles the mixing of dry feeds, and blending of molasses, fish solubles, animal fats and other liquid additives with the same ease and dependability.

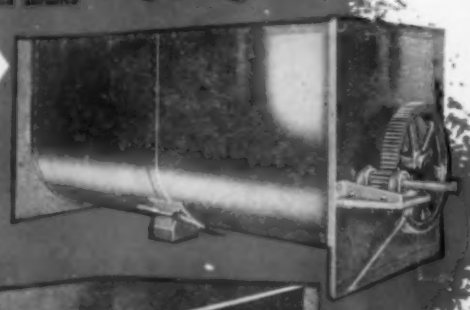
The exclusively designed Marion mixing arm and paddle blades scoop, lift and tumble each batch with a continuous, thorough mixing action—keeping every minute portion of the batch moving from the ends to center. A mixing cycle that never ends—to guarantee formula uniformity.



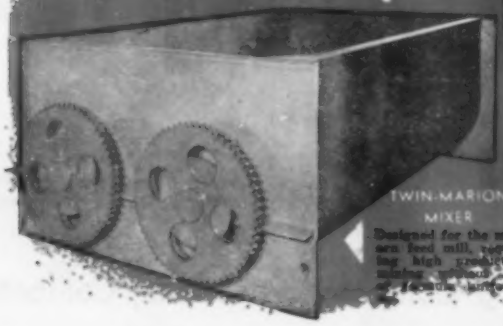
Engineered by Specialists in the Manufacture of Quality Mineral Mixing Equipment

INDUSTRIAL MIXER
The Marion Industrial Mixer is engineered to precision mix the roughest mixes, and recommended for heavy and abrasive materials.

STANDARD MIXER
A rugged, dependable mixer, that will provide absolute mix uniformity for years to come.



TWIN-MARION MIXER
Designed for the modern feed mill, permitting high production mixing, low head room requirements.



The MARION MIXER has proved to be one of the Most Accurate and Versatile mixers in the industry. The exclusive Marion mixing and blending action is the key to its accuracy because of its continuous cross-blending and other mixing action which insures that even the smallest amounts of materials can be thoroughly and completely blended into your product. A constant uniform mix is guaranteed batch after batch, bag after bag.

Send TODAY!

RAPIDS MACHINERY CO.
987 11th Street, Marion, Iowa

I am interested in the MARION MIXERS checked below:

☐ MOLASSES MIXER: CAPACITY ☐ 1000# ☐ 2000# ☐ 3000# ☐ 4000#

☐ DRY MIXER CAPACITY ☐ 300# ☐ 500# ☐ 1000# ☐ 2000# ☐ 3000# ☐ 4000# ☐ 6000#

NAME _____

ADDRESS _____

CITY _____ STATE _____

Blatchford's ESTABLISHED IN 1900

NEW FORTIFIERS for LOWER FEED COST!

new **BROILER Vitadine**
"Power packed" with high levels of all essential nutrients including antibiotics, Arsanilic Acid, UGF, Vitamins and Trace Minerals.

new **STARTER SWINEX WITH DYNAFAC**
New Growth and Anti-Scours Agent

WRITE **TODAY** For Complete Report on These New Fortifiers!
DEPT. 2113

Blatchford's ESTABLISHED IN 1900

Main Plant and Offices WAUKEGAN, ILL. Midwest Plant Des Moines, Iowa West Coast Division Nampa, Idaho

Did you know you can tailor nf-180® layer feed to every egg producer's needs with these two plans?

There are two different approaches these days to the use of nf-180 in layer and breeder rations. Both work! And their flexibility lets you meet the needs of almost every situation.

Most poultry raisers agree that nf-180 *is* all it's cracked up to be . . . that it practically outdates all other poultry feed medications. But some flock owners champion one method of using nf-180 while an equally enthusiastic group prefers another way. Now you can satisfy both.

Quite a few poultrymen — especially the big commercial operators—prefer to feed a continuous low level of nf-180 to provide 25 grams furazolidone per ton of complete feed. They like the way it improves overall flock performance, stimulates egg production, and improves feed-egg ratios. This is the popular *Penny-a-Month* Low Level program.

Other egg producers are sold on nf-180 medicated feeds for periodic use to knock out disease and stress troubles. This is the *Week-a-Month Protective Feeding plan.* It is remarkably effective for fighting laying slumps, off-feed problems, disease outbreaks. An nf-180 booster feed (containing 100 grams of furazolidone per ton) is the ideal feed for this plan.

You'll have requests for information on nf-180 medicated feeds to fit both plans. So Hess & Clark has prepared two kits . . . one for each plan . . . which give the details you'll need to answer inquiries and set up specific programs for customers. Send for both the "Penny-a-Month" and "Week-a-Month" kits now, so you'll be fully armed with this versatile, flexible way to fill the feed and management needs of your poultry customers. The kits are free, of course.

NT-8-6

nf-180®
furazolidone
HESS & CLARK, Inc.
ASHLAND, OHIO

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7247—Chemical Company Brochure

"National Distillers and Chemical Corporation Expands in the Chemical Industry" is the title of a brochure published by U.S. Industrial Chemicals, Division of National Distillers and Chemical Corp. to describe its chemical activities. The 40-page booklet is designed to explain the history of the company and various sections are labeled "How We've Grown," "How We're Organized," "What We Make" and "Where We Produce." For details, check No. 7247 and mail.

No. 7253—Folder On "Penstrep" Line

Greater therapeutic effectiveness against a wide range of infections through used of "Penstrep" is claimed in a new folder issued by the manufacturer, Merck & Co., Chemical Division. "Penstrep" is a combination of penicillin and streptomycin and is prescribed in animal health treatment of peritonitis, deep abscesses, infected wounds, bovine mastitis, shipping fever, calf diphtheria, calf pneumonia and other infections. The folder is available without charge. For more complete details check No. 7253 on coupon and mail to this publication.

No. 7254—Texturing Material

The development of a golden-colored derivative from cocoanut fat that can be used for texturing alfalfa, feedstuffs and mash feeds, was announced by Philip R. Park, Inc. The addition of ⅛ to 1% of the material, called Par-Gold, improves the physical characteristics of feedstuffs, the company claims. Texture, color and appearance are all favorably affected, the company said and dustiness is reduced and handling facilitated. For more complete details, check No. 7254 on the coupon and mail to this publication.

No. 7258—Weigher, Filler Bulletin

The Holm Model GF weighing and filling machine for packaging of free-flowing materials is described in a bulletin offered by the Richardson Scale Co., Clifton, N.J. Bulletin H-2 tells how the machine operates, lists specifications and describes component parts. A photograph of the unit is included and labeled for working parts. Check No. 7258 on the coupon and mail to this publication for copies.

No. 7256—Feed Mill Story

A photo-caption story outlining the plant and services of a modern custom feed mill is available from Sprout, Waldron & Co., Inc. The four-page, illustrated article describes the operations at Farmers Supply & Feed Co., Reidsville, N.C., which was engineered and equipped by Sprout-Waldron. Copies of the bulletin are available by checking No. 7256 on the coupon and mailing to this publication.

No. 7255—Ventilation System

An overspace ventilation system has been developed by the Rolfes Grain Aeration Companies to overcome the hazard of extreme heat in flat storage buildings during hot weather. The system employs a louvre that is installed beneath the roofline at one end of the building to let in outside air. A fan at the opposite end exhausts the heated dead air from inside and maintains constant circulation. For further details on the system, check No. 7255 on the coupon and mail to Feedstuffs.

No. 7257—Pulverizer Mailing Piece

A mailing piece, containing information on the value of replacing worn parts, has been compiled by the Prater Pulverizer Co. Comparative drawings of new and worn screens, screen guides, screen openings, hammers, crusher lugs and shear bar, fan discharge stripper and fan blades, show how worn parts can be detected in time to prevent reduced feeding quality of feed produced with company mills. For copies, check No. 7257 and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7173—Pig and poultry feed unit, J. B. Sedberry, Inc.

No. 7174—Industrial fan bulletin, Day Sales Co.

No. 7175—Packaged gas producing equipment, Southwest Industries, Inc.

No. 7176—Rental program for Tote bins, Tote System, Inc.

No. 7177—Poultry feed fortification product, Borden Co.

No. 7178—Automatic tubular water warmer, Smith-Gates Corp.

No. 7179 — Handbook on copy boards, Wagner Sign Service, Inc.

No. 7180—Bulk shipping container, Ohio Boxboard Co.

No. 7181—Steel buildings in color, Stran-Steel Corp.

No. 7182—Grain drying equipment catalog, Aeroglide Corp.

No. 7183—Broiler, layer coccidiostat, American Cyanamid Co.

No. 7184—Four-ton capacity bulk feed bin, Leach Manufacturing Co.

No. 7185—Automatic bag closure literature, Aeroglide Corp.

No. 7186 — Automatic "tare-out" system, Richardson Scale Co.

No. 7187—Bulletin on pneumatic conveyor design, Sprout, Waldron & Co.

No. 7188 — Modern farming film, Stran-Steel Corp.

No. 7189 — Poultry vaccination booklet, Vineland Poultry Laboratories.

No. 7190 — Feeding trial results brochure, Flavor Corporation of America.

No. 7191 — Trough-belt conveyor, Universal Hoist Co.

No. 7192—Grain roller mill, W-W Grinder Corp.

No. 7193—Vacuum barrel handling unit, Vac-U-Lift Co.

No. 7194—Grain fumigator, Seedburo Equipment Co.

No. 7195—Bulk-bag feed body, Henderson Manufacturing Co.

No. 7196 — Fourteen-hole laying nest, Oakes Manufacturing Co.

No. 7197—Peebles' 50-lb. red whey block, Western Condensing Co.

No. 7198—Bulk feed bins, Brock Manufacturing, Inc.

No. 7199 — Ball bearing attrition mills, Munson Mill Machinery Co.

No. 7200—Fall promotion displays, American Cyanamid Co.

No. 7201—Poultry health product, Pabst Brewing Co.

No. 7202—Worm control brochures, Rhodia, Inc.

No. 7203—Poultry disease book, Dr. Salsbury's Laboratories.

No. 7204—New series of pellet mill dies, Sprout, Waldron & Co., Inc.

No. 7205 — Spring materials handling truck, Everlevell Co.

No. 7206—Bulk feed handling report, Dorsey Trailers.

No. 7207—Seaweed feed additive, Algit, Inc.

No. 7208—Storage structure booklet, Sprout, Waldron & Co., Inc.

No. 7209—Feed blender with meter,

Send me information on the items marked:

- ☐ No. 7247—Chemical Company Brochure
- ☐ No. 7253—Folder on "Penstrep" Line
- ☐ No. 7254—Texturing Material
- ☐ No. 7255—Ventilation System
- ☐ No. 7256—Feed Mill Story
- ☐ No. 7257—Pulverizer Mailing Piece
- ☐ No. 7258—Weigher, Filler Bulletin

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

——— CLIP OUT — FOLD OVER ON THIS LINE — FASTEN (STAPLE, TAPE, GLUE) — MAIL ———

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

Ask for it by name

★ More protein
★ More Vitamin-B¹
★ Solvent Extracted Meal...Pellets ...or Grits

Minnesota Linseed Oil Company
Minneapolis 21, Minnesota

Minnesota
SOLVENT EXTRACTED
LINSEED MEAL

Hoffman

for complete nutritional service

Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

Barnard & Leas Manufacturing Co., Inc.

No. 7210—Exhibit display, Federal Displays, Inc.

No. 7211 — Range feeding cyclone attachment, Sprout, Waldron & Co., Inc.

No. 7212 — Industrial fan bulletin, Day Co.

No. 7213—Mobile floor crane, Vanguard Engineering Co.

No. 7214—Magnetic drum separators, Eriez Manufacturing Co.

No. 7215 — Injectable antibiotics, Merck & Co., Inc.

No. 7216 — Grain fumigant literature, The Dow Chemical Co.

No. 7217—Nesting material folder, Stone Mountain Grit Co.

No. 2053—New bag concept, Bemis Bro. Bag Co.

No. 7218—Case imprinting machine, Rotary Imprinters, Inc.

No. 7219—Formula changeover control system, Richardson Scale Co.

No. 7220—Packing or bagging scale, Thayer Scale Corp.

No. 7221—Grain conveyor literature, Vac-U-Vator, division of Dunbar Kapple, Inc.

No. 7222—Corn grader technical bulletin, Sprout, Waldron & Co., Inc.

No. 7223 — Automatic self-feeder for hogs, Baughman Manufacturing Co.

No. 7224—Cattle health product, Ciba Pharmaceutical Products, Inc.

No. 7225—Conveyor trough, Screw Conveyor Corp.

No. 7226—Portable feed mixer, Green Isle Manufacturing Co.

No. 7227—Animal health product, the Dow Chemical Co.

No. 7228—Used lift truck buying and trading service, Clark Equipment Co.

No. 7229—Liquid tote tanks, Tote System, Inc.

No. 7230—Weighing and filling machine, Richardson Scale Co.

No. 7231—Portable crop dryer, the Mathews Co.

No. 7233—Poultry nutrition booklet, Western Condensing Co.

No. 7234—Poultry, hog equipment list, the Brower Manufacturing Co.

No. 7235—Grain dockage scale, O. B. Armstrong.

No. 7236 — Bag handle concept, Hudson Pulp & Paper Co.

No. 7237 — Cyclonic feed mixer, Barnard & Leas Manufacturing Co.

No. 7238—Hog health handbook, Dr. Salsbury's Laboratories.

No. 7239—High-speed sewing head, Union Special Machine Co.

No. 7240—Feed supplement, Peter Hand Foundation.

No. 7241—High-capacity grain dryer, Behlen Manufacturing Co.

No. 7242—Scale data sheet, Richardson Scale Co.

No. 7243—Steel building literature, Butler Manufacturing Co.

No. 7244 — Formula feed folder, Sohio Chemical Co.

No. 7245 — Materials handling units, Daffin Manufacturing Co.

No. 7246—Poultry disease booklet, Sterwin Chemicals, Inc.

No. 7248 — Animal health folder, Merck & Co., Inc.

No. 7249 — Poultry health folder, Merck & Co., Inc.

No. 7250—Automatic egg counter, Hawkes Cage System.

No. 7251—Poultry de-winger, Dakota Ranches.

No. 7252—Hammermill literature, Prater Pulverizer Co.

CARGILL

Cargill CREATIVE PROCESSING

CREATIVE PROCESSORS OF FARM PRODUCTS

FEEDSTUFFS—*LEADER in its field*

More advertisers use FEEDSTUFFS than any other publication in the feed industry

Use Your Own Salt and Calcium with Herman Nagel's **Formula B** PHOSPHORUS CONCENTRATE WITH TRACE MINERALS

to Supply Every Needed Mineral

in a form so soluble "it melts on your tongue."

The HERMAN NAGEL Co.
53 W. Jackson Blvd.
Chicago 4, Illinois

HI-SEAS

stabilized
MENHADEN FISH MEAL
and
MENHADEN WHOLE MEAL
(with fish solubles)

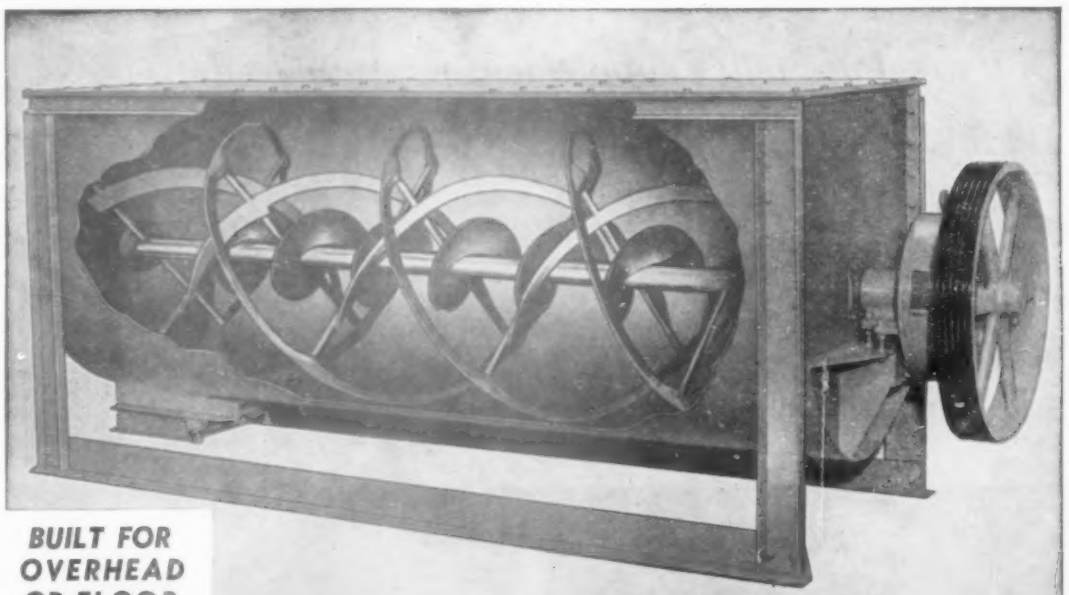
FIRST with . . .
GUARANTEED ANALYSIS
(of over-all Protein Digestibility and Amino Acids)

EXCLUSIVE ANTI-OXIDANT PROCESS

HIGHEST METABOLIZABLE ENERGY VALUES

write for full details to:
HAYNIE MENHADEN PRODUCTS INC.
WILDWOOD, N. J.

HI-SEAS



BUILT FOR OVERHEAD OR FLOOR MOUNTING

UNIFORM BLENDING AT HIGH CAPACITY IN 2 TO 7 MINUTES

Strong-Scott Triple Action Mixers Solve Mixing And Blending Problems

Now you can get a horizontal batch type mixer, with exclusive "Triple Action" mixing, created by the unique Strong-Scott triple ribbon and spiral assembly. This blending, folding and mixing action exposes each particle to thousands of separate mixing actions per minute, producing a well balanced, uniformly mixed product of the highest efficiency known.

THOROUGH MIXING — Complete mixing and blending in 2 to 7 minutes. Smooth interiors, without ridges or vanes, eliminate any gathering of materials and assure a thorough, sanitary, clean operation. Available in sizes of ½ to 6 ton capacities.

PRECISION ENGINEERING—The Strong-Scott Triple Action Mixer offers the ideal combination of modern engineering design, simplicity and overall ruggedness. The end bearings supporting the agitator assembly adjust vertically assuring an exact tolerance between the ribbons and the tub surface at all times. Built of heavy gauge steel, stainless steel or commercial alloys.

VERSATILITY—May be overhead or floor mounted. An overhead installation of a Triple Action Mixer may utilize the dual discharge arrangement. A reversing switch permits bulk discharge directly into a truck, or to the handy double sacker at the opposite end of the mixer, which can be located inside the plant. Consult Strong-Scott with any mixing, separating or grinding problem you may have. Let our production engineers provide your answer at no cost to you.

The Strong-Scott Pre-Mixers are also of the Triple Action agitator design. Normally supplied with a high leg mounting, they are engineered for initial preparation of feed supplements containing chemical ingredients, where a large mixer is not required. Available in 12, 15 and 18 cubic foot sizes.

The Strong Scott Mfg. Co.

Equipment Designed for Better Processing

451 TAFT STREET N.E., MINNEAPOLIS 13, MINNESOTA

Dept. FS-1115

CLIP AND MAIL TO
STRONG-SCOTT

☐ **Please Send Me the Bulletin on TRIPLE ACTION MIXERS**

☐ **I WOULD LIKE MORE INFORMATION ON THE CUSTOMER SERVICE LABORATORY**

☐ **I WOULD LIKE TO HAVE A STRONG-SCOTT REPRESENTATIVE CALL ON ME**

NAME .....

ADDRESS .....

CITY ..... ZONE ... STATE ....

Federal Judges Open Way for ICC Ruling on Tennessee Freight Dispute

BIRMINGHAM, ALA.—Three federal judges hearing litigation in a controversy over "ex-barge" rates affecting Tennessee River ports have given the Interstate Commerce Commission until March 1 to rule on the rate dispute.

A ruling in favor of the states would mean a feed price break for Alabama and southern meat and poultry producers and a big industrial boost for Tennessee River ports, some observers said.

Involved is a suit brought by the Arrow Transportation Co., a barge line, with the states of Alabama and Tennessee, the Tennessee Valley Authority, Tennessee River ports of Guntersville, Decatur, Knoxville and Chattanooga, the Alabama Farm Bureau Federation and various grain terminal associations and cooperatives intervening, in an effort to set aside ICC rates on grain shipped to river ports by barge and out from the ports by rail. The rates involved are called "ex-barge" rates.

Lined up on the other side of the controversy are railroad firms and the ICC, who are in favor of maintaining present "ex-barge" rates.

Judge Richard T. Rives, Fifth Circuit Court of Appeals, and U.S. District Judges Seybourn H. Lynne and H. H. Grooms heard the case.

Attorneys for the Arrow Transportation Co. call the rates "much higher than applies if the grain has been brought to these ports by rail, much higher than the level of rates from the competing port of Memphis, and so high that the rate cannot be used." They said the rates are so high it is "impossible to use barge transportation for any grain that must be reshipped from the ports by rail."

On the other side, attorneys for the ICC and nearly 50 railroads argue that the "railroad grain rate structure of this country, built up over a period of years through the joint efforts of the railroads, the grain industry and the ICC . . . results in a single charge from one shipping point to each final destination which is exactly the same to everybody."

Spokesmen for the railroads said it costs more to ship out grain that has come in by barge and that a change in rates would "short circuit" the existing grain industry and give the barge lines "preferential treatment."

The case, which actually began in 1951, caused a unique split in government legal efforts. Attorneys for the Justice Department are on the side of the plaintiffs, arguing against the ICC.

Charles McCarthy, general counsel for the TVA, said the South, in the process of changing over from row crop to meat and poultry farming, suffers a grain deficit. It needs grain from the Midwest, he said. Grain coming in by barge has a low rate, he claims, but when it is unloaded at the Tennessee River, it can't be transshipped by rail without the rate going up. He said further that a shipper who brings grain into the South by rail can trans-ship at less than the regular rate.

Also represented in the case is the Indianapolis Board of Trade, which is with the ICC in the action. Its representative asked the court to consider the "public" and the "producers and millers" in the North who have large businesses established and who depend on rail transportation to move grain and finished products. "Why should they be sacrificed to TVA and the barge lines?" he asked.

The judges dissolved a temporary injunction they issued a week previous preventing the ICC from acting on the case until the hearing. The dissolution will allow the ICC to rule before the March deadline.

NEW YORK BOUND—One of the top winners in a recent contest for the feed organization of A. E. Staley Manufacturing Co., Decatur, Ill., Chic Spindler (center) and his wife, Newburgh, Ind., receive congratulations from Lloyd A. Winslow, formula feed department manager of the firm. Mr. Spindler won an all-expense New York vacation for two.

Borden's 3rd Quarter Earnings Top 1957

NEW YORK—Borden Co. third quarter earnings were up over the comparable 1957 period although dollar sales were down slightly, Harold W. Comfort, president, reported. Mr. Comfort said he was optimistic about the future and predicted that 1958 earnings would be better than the all-time high of 1957.

The 1958 third quarter sales were $231,376,016, down 3.9% from the $240,773,974 of the 1957 third quarter. Earnings were $6,949,844, up about 6.5% from the year-earlier $6,528,181 figure.

WIN PROMOTION AWARDS

ST. LOUIS—Two St. Louis firms, Ralston Purina Co. and the Pet Milk Co., have been awarded a total of five "Top Promotions of the Year" awards as the result of a nationwide ballot by retailers sponsored by Food Topics and Food Field Reporter, food publications.

Pure whey supplement for your feeds:

KRACO

The fresh-dried whole whey that's naturally sweet

- no neutralizers added to upset milk mineral balance
- no fermentation to reduce high lactose content*

**Kraco is guaranteed at least 65% lactose—runs are usually between 70-72%*

Kraco is made by Kraft—the country's largest producer of raw whey.

In processing this important feed supplement, Kraft uses the whey from low-acid cheese—and dries it within hours after it is drawn from the cheese vats.

For these two reasons, Kraco is *naturally* fresh, *naturally* sweet. Acid content is guaranteed at not more than 3.5%.

When you supplement your feeds with Kraco, you are using *pure* whey. Nothing has been added, nothing taken away.

Kraco contains all the whey nutrients, including the valuable whey factor, lactose (minimum 65%), milk protein (12%, mostly lactalbumin), milk minerals and B complex vitamins.

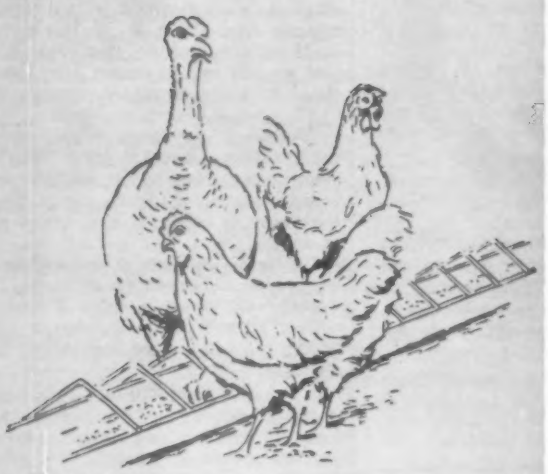
Ask the Kraft Man for full particulars.

KRACO *is a Kraft Product* / *Order from* KRAFT FOODS *Div. of National Dairy Products Corp.* 500 Peshtigo Court, Chicago 90, Illinois

Always Something New in Bag Design! in Bag Printing! and *Always Quality*

PERCY KENT BAG COMPANY, INC.
KANSAS CITY
BUFFALO • NEW YORK

MULTIWALLS • COTTONS • BURLAPS



DaweNzyme
PERFORMING COMMERCIALLY

DaweNzyme is long out of the laboratory stage and into commercial usage. Hundreds of carloads of top-performing feeds are being fortified with DaweNzyme, the starch-splitting enzyme system which makes barley the approximate of corn in growth, feed efficiency and palatability.

DaweNzyme extensively tested by state experiment stations and proved commercially, is an economic boon to those where barley is available for less than corn. With DaweNzyme, barley can be the principal grain without the former penalties of lowered growth and feed efficiency, compared to corn.

DaweNzyme is easily incorporated in the feed formula. It is a dry, free-flowing, stable material. No special handling is involved and ordinary mixing procedures are followed.

While attention has been focused on barley, tests show small, but consistent, improvements in the utilization of corn itself, when supplemented with DaweNzyme.

Dawe's

DaweNzyme©

makes barley better for birds at lower cost than corn diet.

1956 ... **Dawe's began research and development on the application of enzymes to nutrition.**

1957 ... **April ... Washington State College reported starch-digesting enzymes improved nutritional value of barley in poultry feeds.**

1957 ... **July ... Dawe's publicly announced DaweNzyme as the first commercially available enzyme system for feed application.**

Investigate the economic advantages of fortifying your feeds with DaweNzyme today. It is available immediately in any quantity.

World's Oldest and Largest Specialists in Vitamin Products for Feeds

Dawe's

Plants and warehouses strategically located throughout the United States to serve you without delay.

DAWE'S LABORATORIES, INC.
4800 South Richmond Street
Chicago 32, Illinois

© Trademark for Dawe's Laboratories ENZYME.

FOREIGN OFFICES:
BELGIUM—13 Courte rue des Claires, Antwerp ITALY—Corso Magenta 81/83, Milan MEXICO—Sierra Leona 755, Mexico 10, D. F. VENEZUELA—Apartado 3050, Caracas

JOE BROOKS

BY AL P. NELSON

Joe Has Ideas

When Joe Brooks got home from the monthly sales training meeting, it was quite late. His wife, Mary, almost asleep, heard the refrigerator door click, and she knew that this meant Joe would forage for some cake, some pie, maybe a little kuchen and perhaps brew himself a cup of coffee.

In fact, Joe liked to sit up and have a lunch after these training meetings. While he digested the food, he seemed to digest some of the ideas that were always brought out at the meetings.

"I might as well go down and have a snack, too," Mary thought. "What's the use of lying here, waiting for Joe? He's always got interesting things to tell after those meetings. I can always take an aspirin to get to sleep, if I have to."

So she put on her housecoat, tidied her hair a bit, put on slippers and went downstairs.

"Hi, Mary," said Joe. "Glad you came down. I always like company. Want something to eat?"

"Well, maybe a cup of coffee. I see you found everything."

Joe grinned as he tackled a piece of cake. "I know where to find things around here—that is, if the twins don't get ahead of me. Gee, cakes and pies go fast in this house. Why don't those kids eat more potatoes to fill up?"

"Potatoes are high priced now, dear," Mary reminded him. "You've been urging them to eat potatoes for years, when spuds were cheap. Now they cost as much or more than pie or cake."

Joe took a swallow of coffee. "Huh, it sure is a changing world."

Mary sat down, poured a cup of coffee, stirred sugar into it slowly. "Anything interesting happen at the meeting?"

New Stunt

Joe chuckled, rubbed a hand on his knee. "I tried a new stunt tonight, just to get their reaction."

"What was that?"

The feed dealer looked speculative. "Well, you know that Dresser News Letter on business I get out of New York. An article in it said that some employees respond to cash prizes and others to ribbons and honors, and that a business man should find out which worked on whom."

"You mean that some employees would rather be a straw boss than get a raise in pay?"

"Exactly," Joe said. "Prestige counts with some people. I thought I'd try it with my men."

"How did it work?"

Joe reached over and with relish lifted a piece of gooseberry pie out of a pan and lovingly put it on his plate. He took a piece on a fork, put it in his mouth, chewed it, then shook his head with pleasure: "Boy, that's good. Well, on this reward business, I made my men a proposition."

"On what?"

"Selling. I told them that the employee who gets the most new customers for the store by May 1 gets a chance to be vice president and buy a little stock."

Mary looked a little alarmed. "How much stock?" she asked. "Don't sell the twins short."

"They got plenty," Joe said. "I'm only going to sell 5% of the stock to the employee who wins that contest. After all, you, I, the twins, your mother, Uncle Julius and your sister are the only ones who have stock. We can still outvote any of them in the business."

"Well," Mary said, "I hope you know what you're doing. I don't like so many stockholders in this corporation."

Joe chuckled. "We'll see how the new customer plan works. I have a hunch we'll be surprised."

"Who looked interested?"

"I couldn't tell. But I also announced another contest."

"Not something else? How much activity do you want out of one sales training meeting?"

Joe's big hand smoothed back his brown hair. "I am offering $100 first prize and $50 second prize to the employees who sell the most advance chick orders by March 1."

"That sounds like a lot of money."

Joe shook his head. "Not when you figure that with every chick order we sell feed, medicine and maybe some equipment and litter. And that we have a chance to follow up for growing mash, then laying mash. I'll

stacks solidly! easier to grip!
Thousands of tiny interlocking grooves are pressed into the tough kraft outer-wall of the new Cromwell STAK-GRIP bag . . . by an embossing process originated by Cromwell. Result: built-in two-way slip-resistance with no reduction in strength!
In over three years of actual use, the Cromwell STAK-GRIP bag has proved these outstanding advantages:
1 cuts breakage losses due to slippage.
2 increases safety because bags stack solidly.
3 helps sales because both dealers and farmers like the flexible, easy-to-handle surface and the extra-brilliant printing.
brightest, strongest printing you've ever seen on a multi-wall bag!
Printing before embossing gives a 3-dimensional effect to the printing, adds amazing brilliance and intensity, and puts a real merchandising wallop behind your brand.
For a free sample and complete information, write on your business letterhead to Mr. O. N. Johnson.
for the latest and best in feed bags
stop bag slippage with
CROMWELL
STAK-GRIP® bags
Cromwell
PAPER COMPANY
4801 South Whipple Street
Chicago 32, Illinois

DEHYDRATED ALFALFA MEAL
Animal Fat Treated
Bulk Bagged Meal Pellets
ALFALFA—MOLASSES
Suncured Alfalfa—20% Cane Molasses
ALFA—CANE
Dehydrated Alfalfa - Animal Fat - Cane Molasses
ROHLOFF BROS., INC.
RFD GRAYTOWN, OHIO

bet those lads will sell lots of baby chicks."

"But suppose all the employees want to become vice presidents and go after new customers and don't concentrate on chick sales?"

Joe laughed. "Say, you've got a good business head, dearie. That's a sound question. Well, in either case, I win, don't I? If I get a lot of new customers, I make plenty of extra sales with no commission except a title, and that doesn't cost me anything. If all those fellows are looking for is cash, then they'll all concentrate on selling chicks, instead of getting new customers. So I win there, too."

"And you know, too, if your men want to become officers of the company, or just make money on sales contests."

"Right," Joe said, pouring another cup of coffee. "Retailing is moving along so fast nowadays, that I don't want to pass up any bet which will make this a stronger organization. If I've got a good vice president in the making, I want to know it. I want the guy to prove himself. I could use an assistant lots of times. After that vice president has proved himself, I can always give him an increase in pay, if he has earned it."

Mary was silent, and so Joe said, "What's the matter, honey?"

"I was wondering," Mary mused, "if men look on their wives the same as they do on their employees, wondering what makes them tick."

"Why, of course, they do," Joe said. "And the women watch the men, too, don't they?"

"Certainly," Mary agreed, "but there's a big difference."

"How come?" Joe asked.

"Well," Mary said, "the employees get a reward—cash or ribbons—for their efforts. Wives get—well, what do they get for extra efforts at the wife job?"

Joe chuckled and put Mary onto his lap. "Come now," he joshed, "you don't expect me to kiss employees, do you?"

After Joe had released her, there was a starry look in Mary's eyes. "Yes," she wondered, "I guess that's it. Women don't want cash or ribbons or offices. Mostly they'll settle for a kiss. What a world!"

Million Mark Reached

AUBURN, ALA.—Alabama farmers are harvesting their first million-bushel grain sorghum crop. According to extension agronomist O. N. Andrews, the 1958 estimated yield of 21 bu. to the acre is the highest on record. Last year grain sorghum production was 774,000 bu. The 10-year average is 538,000 bu. Five thousand more acres were planted in grain sorghum this year than last, making a total of 48,000 acres. Mr. Andrews attributed the 1958 banner crop to better production practices and use of new hybrid varieties, plus favorable weather conditions.

Value of Treating Ewes For Vibriosis Stressed

MOSCOW, IDAHO—A test at the U.S. sheep experiment station, Dubois, Idaho, shows benefits of treating ewes to prevent outbreaks of vibriosis. Dr. Floyd W. Frank, veterinarian at the University of Idaho branch experiment station at Caldwell, said the field trial demonstrated the value of treatment.

The Dubois station had cases of vibriosis last spring. Previous research suggested that antibiotic injections or antibiotic feeding, or a combination of the two might reduce losses.

Dr. Frank separated the ewes into eight groups of about 100 each for use in the experiment. There were only 246 abortions in contrast to 672 that were likely to occur without treatment. Figured at the rate of $20 for each of the 426 pregnancies saved, the treatment was worth $8,520.

Antibiotics for the trial were furnished by the American Cyanamid Co. The ewes were Columbia, Targhee, and Rambouillet.

Number of ewes that died during lambing in 1958 when all ewes that lost their lambs were given injections was only one fifth as large as it was in 1952 when the ewes were not treated. Ewe losses were also below the average for years when there was no vibriosis outbreak.

Dosages and interval between treatment for the various antibiotics are still the subject of research, but the results of this test prove that something can be done to reduce losses in a vibriosis outbreak, Dr. Frank said.

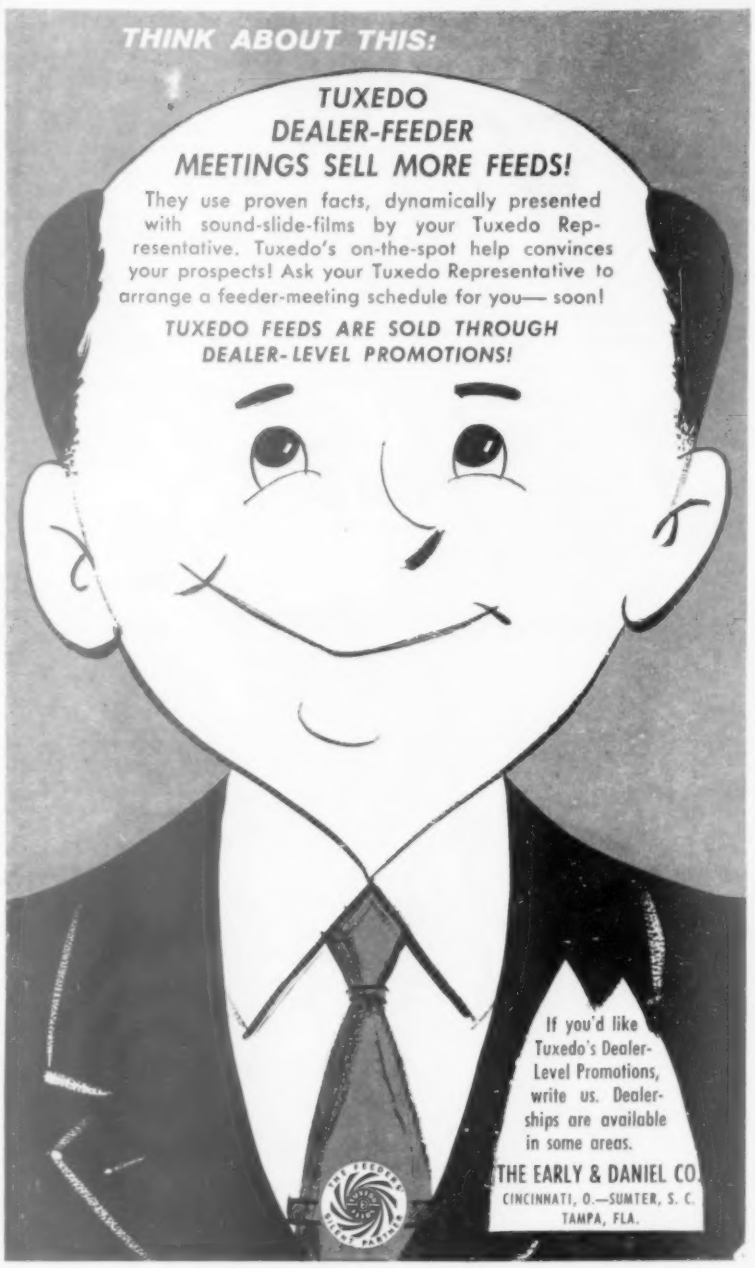
Poultry Association Leases Processing Unit

SALEM, ORE.—The Northwest Poultry & Dairy Co.'s $280,000 processing plant here has been leased by the Washington Cooperative Farmers Assn., which will begin handling fryer and fowl chickens, it is announced by Russell Rathbone, assistant manager of Washington Co-op.

Bridgmon Bros., Portland, will operate the facilities here in conjunction with its Portland plant, with Harold Bridgmon managing both facilities.

Frying chickens will be marketed in Salem, Albany and Eugene areas and other northwest markets as part of the Bridgmon Bros. retail distribution.

Mr. Rathbone explained that capacity of the Portland plant has been inadequate to handle the volume of fryers and fowl produced for the association by northwest growers, and leasing of additional units will relieve this situation and provide another outlet for locally produced fryer and fowl.


THINK ABOUT THIS:
TUXEDO
DEALER-FEEDER
MEETINGS SELL MORE FEEDS!
They use proven facts, dynamically presented with sound-slide-films by your Tuxedo Representative. Tuxedo's on-the-spot help convinces your prospects! Ask your Tuxedo Representative to arrange a feeder-meeting schedule for you— soon!
TUXEDO FEEDS ARE SOLD THROUGH DEALER-LEVEL PROMOTIONS!
If you'd like Tuxedo's Dealer-Level Promotions, write us. Dealerships are available in some areas.
THE EARLY & DANIEL CO.
CINCINNATI, O.—SUMTER, S. C.
TAMPA, FLA.

VAN DUSEN HARRINGTON
DIVISION
F. H. Peavey & Co.
GRAIN SOYBEANS FLAX
Founded 1852
MINNEAPOLIS Pv DULUTH

K
Water soluble
Rapidly absorbed
Fast, effective protection against hemorrhagic disease
Economical
Completely stable potency
*U.S. Patents 2,331,808 & 2,367,302

Dept. FS-1115
Please rush complete information on Hetrogen K and latest reports on Vitamin K research.
Firm Name _____
Individual _____
Address _____

Hetrogen K is available as an easy to use premix and as a free flowing concentrate. Recommended for medication of drinking water. For complete information, write or call collect:

HETEROCHEMICAL CORPORATION, 111 E. Hawthorne Avenue, Valley Stream, Long Island, N. Y. · LOcust 1-8225

IT'S SURE TO BE HERE EVERY WEEK OF THE YEAR

Solulac production is not just a seasonal thing. You can formulate your feeds with it and be sure of a supply every week in the year. Solulac is your steady source of high nutritional values . . . unidentified growth factors... vitamins. Guaranteed to be free flowing. And it's yours, whenever you need it, in 50 and 100 pound bags or bulk carloads. Write, wire or phone. Grain Processing Corporation is also your continuous source of corn distillers dried grains.

Copyright 1958

GRAIN PROCESSING CORPORATION

MUSCATINE, IOWA • Telephone AMherst 3-1321 TWX 495

Primary Fermentation Products

Riboflavin — Vitamin B-12 — Bacitracin — GP-101, source of whey and other unidentified growth factors.

North Carolina Animal Conference Plans Announced

RALEIGH, N.C.—Agrcultural scientists and feed manufacturers from several states are expected to be on hand at North Carolina State College here Dec. 4-5 for the N. C. Animal Nutrition Conference.

The two-day affair will feature latest reports of scientific research and five principal talks on subjects of immediate interest to the feed industry and livestock producers.

Dr. Harold A. Ramsey of N. C. State College will speak on "Purified Diets for Ruminants"; Dr. A. J. Clawson of N. C. State will discuss "Swine Feeding Programs"; Dr. J. R. Couch, Texas A&M College, will speak on "Feeding and Management for Replacement Stock," and "Formulation of Feeds for Laying Hens"; Dr. Eric W. Swanson, University of Tennessee, will speak on "Rumination in Young Calves and Its Effect in Feed Requirements," and "Normal vs. Subnormal or Supernormal Feeding for Dairy Heifers"; and Dr. G. Lynn Romoser, Monsanto Chemical Co., will speak on "Amino Acids in Feeds."

The conference will also feature a panel discussion on trends in livestock feeding, moderated by Dr. E. I. Robertson of John W. Eshelman & Sons, Lancaster, Pa. Dr. E. R. Barrick of N. C. State College is chairman of the conference general planning committee.

Does It Pay to Hold Turkeys for Price Rise?

ATHENS, GA.—The economics of holding back turkeys for a few days or weeks to take advantage of any possible price rises can be measured in a table released recently by J. H. Massey, extension poultryman at the University of Georgia, Athens.

The chart below shows the pounds of feed required to produce each pound of gain. To use the chart, estimate average weight of the turkeys against today's price. If hens weigh an average of, say, 12 lb. and are sold today at 25¢ lb., then the turkey would bring $3.

If these hens are held an additional period to put on another pound of weight, it would require 6.7 lb. of feed. If this feed cost is 4¢ lb., then it would cost 26.8¢ feed cost with a gain in selling price of 25¢. This would be a loss of 1.8¢ on feed unless the price went up.

If the price went up 1¢ lb. during this period, it would bring in an additional 12¢ for the original weight plus 26¢ for the added pound less the feed cost of 26.8¢ which would give a profit of 11.2¢ per turkey held.

For another example, estimate the average weight of a flock of toms at 23 lb. The chart shows that it requires 5.1 lb. of feed to add the next pound of body weight. By multiplying 5.1 times the cost of feed, then we can estimate the feed cost for adding the next pound of body weight.

Mr. Massey also suggested that turkey producers contact several buyers before selling. He said the cost of a Georgia turkey producer calling all the buyers in his area would be greatly repaid by receiving only ½¢ lb. price differential.

Feed Required to Produce An Additional 1-lb. Gain at Any Weight

Live weight	—Feed required to gain 1-lb. in—live weight			
	B. B. Bronze Males	B. B. Bronze Females	Beltsville Whites Males	Beltsville Whites Females
lb.	lb.	lb.	lb.	lb.
1	1.8	1.8	2.2	2.7
2	1.9	1.9	2.5	2.8
3	2.0	2.0	2.7	2.8
4	2.3	2.9	2.7	2.8
5	3.0	3.3	2.8	4.0
6	3.0	3.6	2.9	4.3
7	3.1	3.9	3.0	6.8
8	3.2	4.1	3.0	17.0
9	3.3	4.4	4.1	
10	3.4	5.0	4.6	
11	3.4	5.3	9.0	
12	3.4	5.0		
13	3.4	6.7		
14	3.4	10.0		
15	3.6	13.6		
16	4.0			
17	4.2			
18	4.3			
19	4.4			
20	4.6			
21	4.8			
22	5.0			
23	5.1			
24	5.1			
25	5.2			
26	5.4			
27	8.6			

Five North Carolina Feed Dealers Form Area Egg Program

KENANSVILLE, N.C.—Five feed mill operators and dealers here in Duplin county have formed an egg market to provide an outlet for their customers and build their own markets, according to a recent issue of Farm Journal.

The magazine said the move has added 1,000 cases per week to the market for Duplin county eggs. This is how it was set up, according to Farm Journal:

Last spring, Ralph Sasser, assistant county agent, got in touch with an egg market in another state where an operator told him there was a market for an additional 1,000 cases a week if they could be provided on a year-around basis.

Mr. Sasser and V. H. Reynolds, the county agent, got the feed dealers together and told them about the new market. The dealers set up RAB Egg Market, Inc., and each feed man now collects the eggs from his producers twice a week and keeps them refrigerated. Once a week, RAB's hauler picks them up from the feed men and hauls to the market. The dealers are shipping 300 cases a week now, and they'll be up to 1,000 cases by next summer, according to Mr. Reynolds. He said some of the dealers are getting into the producing end. One just put in 50,000 pullets.

The article quotes Mr. Reynolds as saying, "Before they organized, growers sold about 150 cases a week wherever they could get rid of them. Now we'll have an assured market of 1,000 cases."

BUILDS NEW ELEVATOR

FENN, IDAHO—Preliminary work has been started here on a $93,000 Union Warehouse Cooperative grain elevator to replace one which burned in September. The facility will hold 180,000 bu. of grain. It is expected to be completed by July 1.

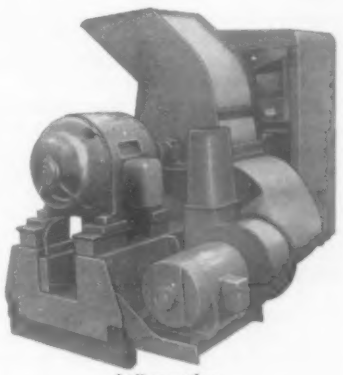
IT'S EASY TO SELL
Toxite®
...Because it's the BEST-KNOWN, ALL-PURPOSE FARM DISINFECTANT SPRAY
ANDERSON BOX COMPANY
Indianapolis 6, Indiana
MFD. BY TOXITE LABORATORIES, INC.

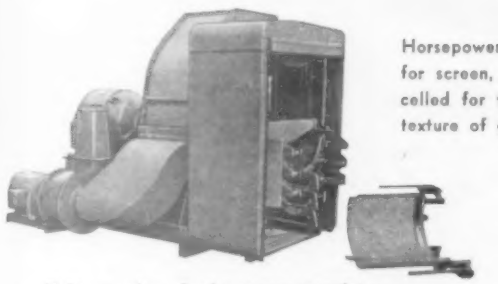
The Mill to use
If You're in Business to Make Money
by providing products and service that win and keep customers . . .
JAY BEE
SUPER-MATIC
MODEL SM
HAMMERMILL
with instant electrical (or manually operated) remote control screen change

- Four electrically operated, push-button control screen changes—without stopping the mill. (Screens can also be changed manually at the mill or from any desired above-floor location.)
- Separate motor-driven fan—all the power of the mill motor goes into grinding.
- Suspension grinding holds stock in contact with hammers by weight of the stock itself—giving a cooler, more uniform grind.
- Precision engineering and built-up bolted construction for smoother operation, easy access to all areas, simpler replacement of parts.

TEXTURE GRIND

Horsepower for horsepower, screen for screen, Jay Bee mills are unexcelled for their consistently uniform texture of grind.


Left rear view


Right rear view, showing screen magazine

For Full Details Mail This Coupon Today!

J. B. Sedberry, Inc., Dept. F., Franklin, Tenn.
Please send me complete information about the Jay Bee Super-matic Model SM Hammermill
Name .....
Company .....
Street or Box .....
City ..... Zone..... State.....

J. B. SEDBERRY, INC., Tyler, Texas—Franklin, Tenn.

ENZYMES

(Continued from page 16)

sponse to enzymes and water treatment decreases in older birds. Presence of a toxic substance other than a major carbohydrate constituent of barley that interferes with digestion must also be considered a possibility.

Enzymes have brought improved results with broilers and turkey developing diets. Washington studies with laying hens have failed to reveal any significant improvement in egg production or feed efficiency. Others have reported improvement with layers. More work is needed to resolve the differences observed with adult birds.

Full advantage probably cannot be taken of the findings until more work is done. However, use of various enzyme products in poultry feeds is already quite widespread in the West.

SELENIUM AS A REQUIRED TRACE MINERAL IN ANIMAL NUTRITION—M. L. Scott, Cornell University: During the past year, a nutrient previously recognized only as an unidentified factor in dried brewers yeast has been discovered to be selenium. Although inorganic salts of selenium, such as sodium selenite, are nutritionally active, it is believed that the metabolically active form of selenium may be a still unidentified organic compound containing selenium.

Selenium has been recognized for years as the toxic element for livestock when present in the diet at levels in excess of 8 parts per million. The recent research has shown that selenium, at much lower levels, is a required mineral nutrient for both chicks and rats. The amount needed in the diet appears to be in the order of .1-.2 ppm.

Recent studies on the effects of selenium upon muscular dystrophy in chicks show that the addition of selenium at approximately 1 ppm (a much higher level than that required for prevention of exudative diathesis) has some effect in reducing incidence of muscular dystrophy in chicks on a vitamin E-deficient diet low in methionine. Addition of either vitamin E or methionine has been completely effective in preventing muscular dystrophy in chicks on this diet. These results indicate an interrelationship in metabolism of vitamin E, methionine and selenium. Intensive experiments are under way in our laboratory to study this interrelationship, and to attempt to determine the metabolic roles of vitamin E and selenium in prevention of exudative diathesis, encephalomalacia, enlarged hock disorder of turkeys and muscular dystrophy.

Studies on selenium, to date, indicate that:

1. Selenium, or an inorganic compound containing selenium, is the active substance in dried brewers yeast previcusly reported to replace vitamin E for prevention of exudative diathesis in chicks and dietary liver necrosis in rats receiving semi-purified Torula yeast-containing diets deficient in vitamin E.

2. Selenium deficiency in chicks can be produced with purified diets containing no Torula yeast.

3. Selenium is a required nutrient per se, necessary for growth and life as well as for prevention of exudative diathesis.

4. Selenium is effective in increasing the serum albumin levels in vitamin E-deficient chicks.

5. Selenium is not effective in prevention of encephalomalacia or improving reproduction in vitamin E-deficient animals.

6. Selenium is at least partially effective in prevention of muscular dystrophy in chicks and lambs.

7. The selenium content of feedstuffs, although variable, appears to be adequate to meet the selenium needs of poultry under normal, practical conditions.

VITAMIN E, SELENIUM AND OTHER FACTORS RELATED TO NUTRITIONAL MUSCULAR DYSTROPHY IN LAMBS—D. E. Hogue, Cornell University: The cause of muscular dystrophy (m. d.) ("stiff lamb" disease) in lambs has been studied continuously at Cornell since 1929.

Although vitamin E was apparently effective in preventing and curing the condition, the Cornell workers did not feel that the answer was a simple vitamin E deficiency and the limited blood data indicated the tocopherol levels of all groups to be similar regardless of the percentage of "stiff" lambs. Also, the known ability of vitamin E to act metabolically in more than one way added interest to the problem. Experiments then were conducted from 1955-56 to date in efforts to elucidate further the nutritional picture behind the "stiff-lamb" disease.

Research findings are summarized as follows:

1. Natural occurring muscular dystrophy in lambs is not a simple vitamin E deficiency.

2. Another factor(s) is apparently effective in preventing m. d. in lambs, and selenium is apparently this factor or one of the factors.

3. The cull beans used in the work may contain an inhibitory-like factor that enhances m. d. in lambs.

PELLETING

(Continued from page 10)

the roughage content of the pellet increased the performance of the lambs.

Beef—Work reported by Baker and others in 1955 on fattening heifers showed that pelleting increased the daily gain over fine ground feed by about 5% but was 20% lower than chopped hay and coarse ground grain. Webb and others reported in 1957 that steer calves obtained a tremendous advantage on pelleted feeds, both in average daily gain and average daily feed intake. However, in one trial the animals fed the non-pelleted feeds did very poorly, gaining only .18 lb. per day. With fattening steers, an increase of nearly 10% in weight gains was indicated due to pelleting a ration containing 65% concentrate.

Apparently fattening steers respond just the reverse of lambs fed the higher roughage pellets. The steers showed increases in daily gain with increases in percentage of concentrate in the ration, whereas lambs gained more rapidly on the higher roughage pellets.

Cornell tests in the past year indicated that although feeding of hay pellets to steers on a mixed hay ration increased rate of gain, feed consumption and feed efficiency, the pellets were not as effective as ground corn when added to a grass-silage ration. Results with beef cattle are not conclusive enough at this time for specific conclusions.

Swine—Work at Montana indicates an increase of about 10% in average daily gain for pellets over meal of a ration containing no corn but with barley, wheat, alfalfa meal and soybean oil meal as the main ingredients. No increase in feed consumption was observed due to the pellets, and thus the increased gains indicate an increase in efficiency of utilization of the ration when pelleted. North Dakota work indicated a decrease in feed required per hundredweight of gain with a pelleted barley ration, with no advantage indicated with pelleting of a corn ration.

In another North Dakota experiment, a pelleted barley ration including 15% oat hulls increased gains over the unpelleted ration by .23 lb. per day and decreased feed required per hundredweight of gain by 120 lb.

PELLETED RATIONS (METABOLIC EFFECTS—S. E. Smith, Cor-

"My Calves Like NURS-A-CALF"

SAYS LEADING INDIANA FARM MANAGER

"This is the best way yet devised for supplementary calf feeding — you are to be congratulated on giving farmers a product that does so much and works so well."

LET THEM KNOW YOU CARRY NURS-A-CALF

The proven "Natural" feeder. Nationally advertised to the farm market.

Kflex NURS-A-CALF soft, flexible vinyl. retail $3.98

Kflex NURS-A-CALF IS A BIG DEMAND ITEM

We have testimonials like this by the score—from farmers who appreciate the ease and convenience of NURS-A-CALF—from dealers whose sales of milk replacers and supplements have skyrocketed since they started to feature NURS-A-CALF! ORDER TODAY

Kflex NURS-A-CALF • R. L. RUSS & CO., INC. • FINDLAY, OHIO
DEALERSHIPS AVAILABLE. Write for complete information.

BINGMAN'S Animal Health Products

Less Mastitis—Higher Milk Production — More Profits

new approach to Herd Health

Results of tests using BINGMAN'S P-17

During this test period herds were fed BINGMAN'S P-17 at low level.*

Herds Tested	FIRST TEST Quarters Tested	Clear	SECOND TEST (in 60 days*) Quarters Tested	Clear	Infd.	Percent Cleared
A.	32	21	28	28	0	100%
B.	95	76	112	108	4	79%
C.	80	34	68	55	13	72%
D.	68	52	68	64	4	78%
E.	74	38	79	72	7	81%
F.	83	69	78	76	2	85%
G.	60	34	44	39	5	81%
H.	36	27	28	26	2	77%
I.	16	11	16	15	1	80%
J.	32	16	28	25	3	81%
K.	48	41	60	59	1	86%
	624	419	609	567	42	79.5%

INDICATION OF SEVERITY OF INFECTION

Degree	1st Test	2nd Test
Slight	94	30
Infected (Mastitis)	66	9
Chronic (Mastitis)	45	3
Total	205	42

BINGMAN'S P-17

WHEN FED AS DIRECTED P-17

Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

ASK ABOUT BINGMAN'S P-17 GUARANTEED FEEDING PROGRAM!

BINGMAN LABORATORIES, INC.
Subsidiary of S & H LABORATORIES, Inc., CALDWELL, OHIO
Note: Sales representatives wanted in many good areas. Write for details.

AT LAST . . .

Sure Protection for Corn Shellers Against Costly Damage from Stones and Foreign Material

ANDERSON'S STONE SLEUTH

PRICE $495.00

STONE SLEUTH is an electronic device **guaranteed to detect stones,** tramp iron and other foreign objects present in ear corn **before** they can cause costly breakdowns and damage in your shelling operation. Upon detection of foreign material, the unit stops immediately. STONE SLEUTH will save you time and money. Check coupon today for details or take advantage of free trial offer.

SEEDBURO EQUIPMENT CO.
Exclusive Distributor of Stone Sleuth
618 W. Jackson Blvd., Dept. FS-11
Chicago 6, Ill.

☐ Ship me a "Stone Sleuth" on 30-day free trial basis.
☐ Send complete information.

Name .....
Firm .....
Address .....
City ..... State .....

WILDCAT CLUB—The 11 salesmen elected to the honorary Wildcat Club of McMillen Feed Mills, Ft. Wayne, Ind., for their records during the past year were given awards during the company's 24th annual sales convention held recently at French Lick, Ind. Shown with the group is Dale W. McMillen (fourth from left, back row), founder of Central Soya Co., Inc., Ft. Wayne, McMillen's parent company. The "wildcats" are (back row, left to right): Frank Poindexter, Lebanon, Ohio; Harold Diller, Asheville, N.C.; Charles McClelland, Perry, Ga.; Arthur Leasure, Galesburg, Ill., and Fred Yingling, Salem, Ind. In the front row (left to right) are: John Hunter, Troy, Ohio; Lloyd Sheets, Delaware, Ohio; Charles Dietrich, Willow Street, Pa.; Max Bleekman, Gadsden, Ala.; John Moore, Greencastle, Ind., and James Cox, St. Louis, Mich.

nell University: For many years feed manufacturers have been keenly interested in the problem of the best physical form of feeds for livestock. However, research men have not been so interested, and thus there has been little to offer in the way of solid information. The subject of feed texture was last reviewed at the Cornell Nutrition Conference in 1953, when it was concluded that there was no advantage in feeding coarse textured concentrates over those ground in the usual manner for dairy cattle. Recently several stations have reported that pelleted feed stimulated significant growth responses in larger farm animals, and the response in some cases has been so striking as to provoke real interest in the part of a number of stations.

Since grinding, rolling, crimping, pelleting or cubing a feed does not alter the chemical composition, why suspect a change in value to the animal? There is some precedence for thinking that a change might occur since it has been known for a long time that grinding a roughage markedly reduces its usefulness to ruminants. Cattle or sheep fed ground hays cease to ruminate, go "off feed" and may bloat. The metabolic mechanism is still unknown.

An analysis of literature, most of it very recent, shows complete agreement that pelleting roughages alone or in combination with concentrates did not increase digestibility of the feeds or their TDN value.

In studies involving net energy values, Blaxter and others in 1955 fed two types of cubes, one from very finely ground hay and the other from medium finely ground hay. The cubed hay passed through the digestive tract more quickly than long hay, and the cubes made from a very finely ground hay quicker than that from medium ground hay. In further studies it was found that cubed hay had significantly lower digestibility coefficients and the finer the grind the lower the digestibility. In examining the details of energy losses, the chopped hay had a lower fecal loss; that is, it was more digestible, but showed higher gas and body heat losses than the cubed hays. These differences compensated each other, so that the final net energy value of the chopped hay equaled that of the cubed hays.

From all of these metabolic studies we can conclude that pelleting or cubing roughages or complete rations does not increase the digestibility of the feeds for ruminants. If any changes do occur, it is in the direction of a decrease in digestibility and, of course, TDN values. However, the ultimate energy value, best measured as net energy, appears to be unaffected. Increased rates of gain associated with the feeding of pelleted feeds is best explained on the basis of a greater intake of total feed.

WESTERN YEAST CULTURES

For 28 Years Have Been a Proven and Dependable Source of

ENZYMES

Now — New

WESTERN LIVE YEAST CULTURE 2-2-5

and

LACTO-ZYME

are even higher in digestive enzymes based on latest experimental data. These products carry a number of Enzymes, including Proteolytic (action on proteins), Amylolytic: Zymase, Maltose and Invertase (action on starches, sugars and fiber), Catalytic, Lactic Ferments and others.

These Active Factors Can Be Added to YOUR FEEDS

At Little or No Extra Cost

You will be hearing more and more about Enzymes in nutrition. Why not have them in your feeds now?

Write

WESTERN YEAST COMPANY

Chillicothe Illinois

FEED MILL INCORPORATES

OLYMPIA, WASH.—The Nordquist Feed Mills, Inc., Redmond, Wash., has been incorporated by Ed L. and Ethel R. Nordquist, Bellevue, and Carl A. Johnson, Seattle.

NATIONAL EGG MONTH

WINTERVILLE, GA. — March, 1959, will be National Egg Month, it was announced here by Dr. Thomas J. Harrold, chairman of the Poultry and Egg National Board's egg commodity committee. This will be the 19th year in which the egg industry has observed a National Egg Month. March has been designated for the third consecutive year.

"We are confident that the entire food industry will lend its full support to next year's National Egg Month, as in the past," Dr. Harrold said. "We are making this announcement at this time so that those who wish to cooperate may start making their plans now," Dr. Harrold stated.

MANAGEMENT DEADWOOD . . . ?

We can help you streamline your technical organization, reduce costs and increase job performance.

MANAGEMENT CONSULTATION, EVALUATION, FORMULATION

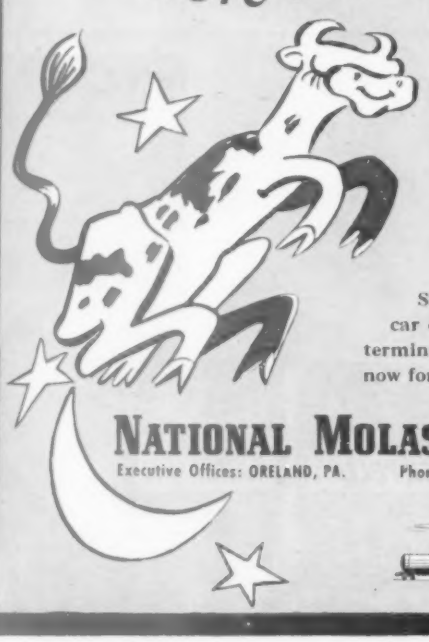
PHONE: CHapel 2-1091

agricon

S. H. MORRISON, Ph.D., D.V.M.
Director

515 Woodlands Drive
Clinton, Iowa

more satisfACTION!



. . . with the world's finest cane blackstrap feeding molasses. Shipped promptly by tank car or tank truck from nearby terminals. Write—wire—or phone now for quotations!

NATIONAL MOLASSES COMPANY

Executive Offices: ORELAND, PA. Phone: Livingston 8-5900 (Philadelphia)

BONU$ BEAUTS **BY CY**

We don't give feeders quite that big a Bonu$, but you'd never guess it from the way most of them talk about their results. When you sell Pillsbury Feed, you'll know what we mean.

Pillsbury's BEST XXXX FEEDS

Pillsbury's BEST Feeds

Search Narrows For Ideal Dry Milk Process

WASHINGTON—The day may not be far off, say scientists of the U.S. Department of Agriculture, when consumers will be able to buy a dry whole milk that mixes readily with either warm or cold water, tastes like fresh milk and is just as nutritious, keeps for a long time without refrigeration and sells at an attractive price.

USDA and other research agencies have been working for years to develop such a product, long hoped for by the U.S. dairy industry. Now scientists of USDA's agricultural research service have succeeded in producing, experimentally, dry whole milk crystals that reconstitute readily in water to give a milk comparable in flavor and food value to that fresh from the dairy.

However, these crystals still have shortcomings: Their relative bulk, plus the fact they must be packaged in the presence of nitrogen gas—a relatively expensive operation, stands in the way of efficient packaging. They keep their good flavor for two or three months at room temperature, but that isn't good enough to meet commercial requirements. Also, the process for making them has yet to be adapted for low-cost dairy industry operation.

ARS researchers are currently working on engineering problems involved in producing dry whole milk, including the changeover from laboratory batch-drying operations to continuous commercial-scale drying.

These are major difficulties, ARS scientists emphasize. Whether dry whole milk can be produced commercially still depends on the outcome of further research. But the success achieved to date makes the researchers optimistic regarding eventual perfection of the product.

Key to the high quality of present experimental dry whole milk is a foam-drying process devised by scientists of the ARS eastern utilization research and development division, working at Wyndmoor, Pa., and Washington, D.C.

In this process, pasteurized and homogenized fresh whole milk is partially dried (concentrated) under vacuum until it becomes a thick fluid containing about 50% solids. (Whole milk contains about 13% solids.)

The next step is to further homogenize the milk, first by subjecting the concentrate to a pressure of 4,000 lb. and then to 500 lb. per sq. in. This treatment breaks up the fat globules more completely than in homogenized retail milk.

The concentrate is then chilled to 55° F., and nitrogen gas is injected, which causes the product to foam as a vacuum is again pulled on it, prior to final drying. In the drying step, the product is gently heated under vacuum to form a stiff, dry foam. It is then broken into crystals and packaged with nitrogen gas.

This foam-dried milk tastes as good as fresh milk if reconstituted soon after it is made. But it begins to pick up off-flavors after nine to 12 weeks at room temperature. Why, precisely, the scientists don't yet know.

One possible cause is the fatty outer coating of milk fat globules, called phospholipid. Agitation during processing causes this substance to disperse throughout the milk and may result in development of off-flavors due to the reaction of phospholipid with oxygen.

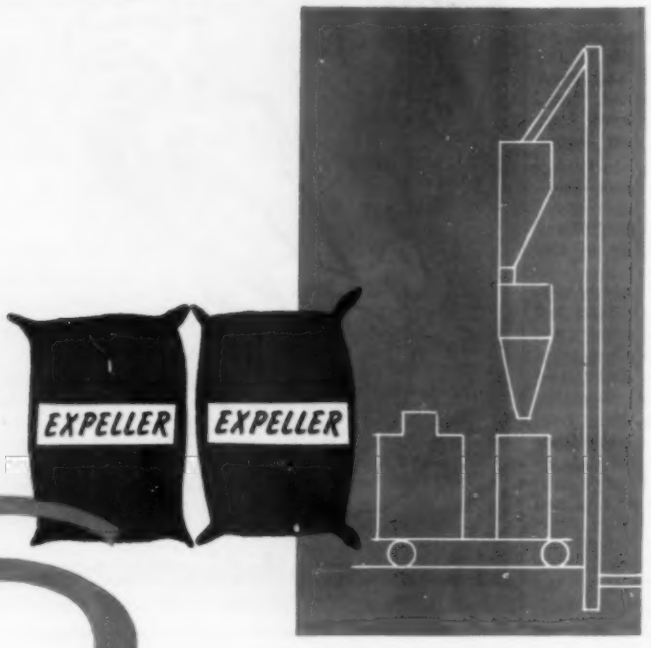
A previously unknown milk enzyme, discovered during the research, may also be involved. This enzyme splits the fat-protein complexes in milk and may possibly act as a catalyst in flavor changes. Still another culprit may be substances called carbonyl compounds (ketones and aldehydes) also found in dry milk. A new method of extracting the aldehydes has been developed that enables the scientists to analyze their role in milk chemistry.

"Your cattle will really go for this. It contains greener grass from the other side of the fence."

North Carolina Feed Tonnage Up Sharply

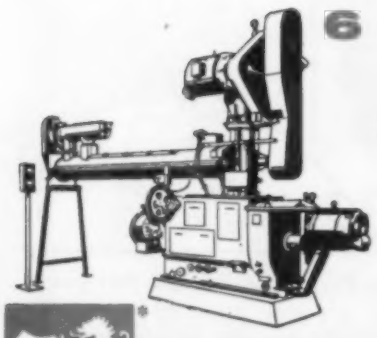
RALEIGH, N.C.—North Carolina feed tonnage continued during the month of September to pile up a substantial margin over the same month of the previous year. Total tonnage during the month was 132,397, compared with 102,826 during September, 1957.

Tonnage for the first three months of the fiscal year starting July 1, 1958, is running about 26% over the same period a year earlier. The total is 397,531, compared with 314,256. Tonnage during July was up almost 37%, during August it was up about 16% and the month of September showed an increase of about 29%.



6 Reasons Why
ANDERSON EXPELLERS*
Produce More Screw Press Cake...

1 As low as 2.7% oil in cottonseed meal at 52 tons per day
2 As high as 40 tons per day peanut kernels at 3.6% residual
3 Superior steels, accurately machined, and specially treated
4 Less downtime due to longer life of wearing parts
5 Lower maintenance and replacement costs
6 Interchangeability of Raw Materials



For true equipment value, buy the press preferred by the industry... Anderson High Capacity Expellers!
*Trade Marks Reg. In U.S. Pat. Off.

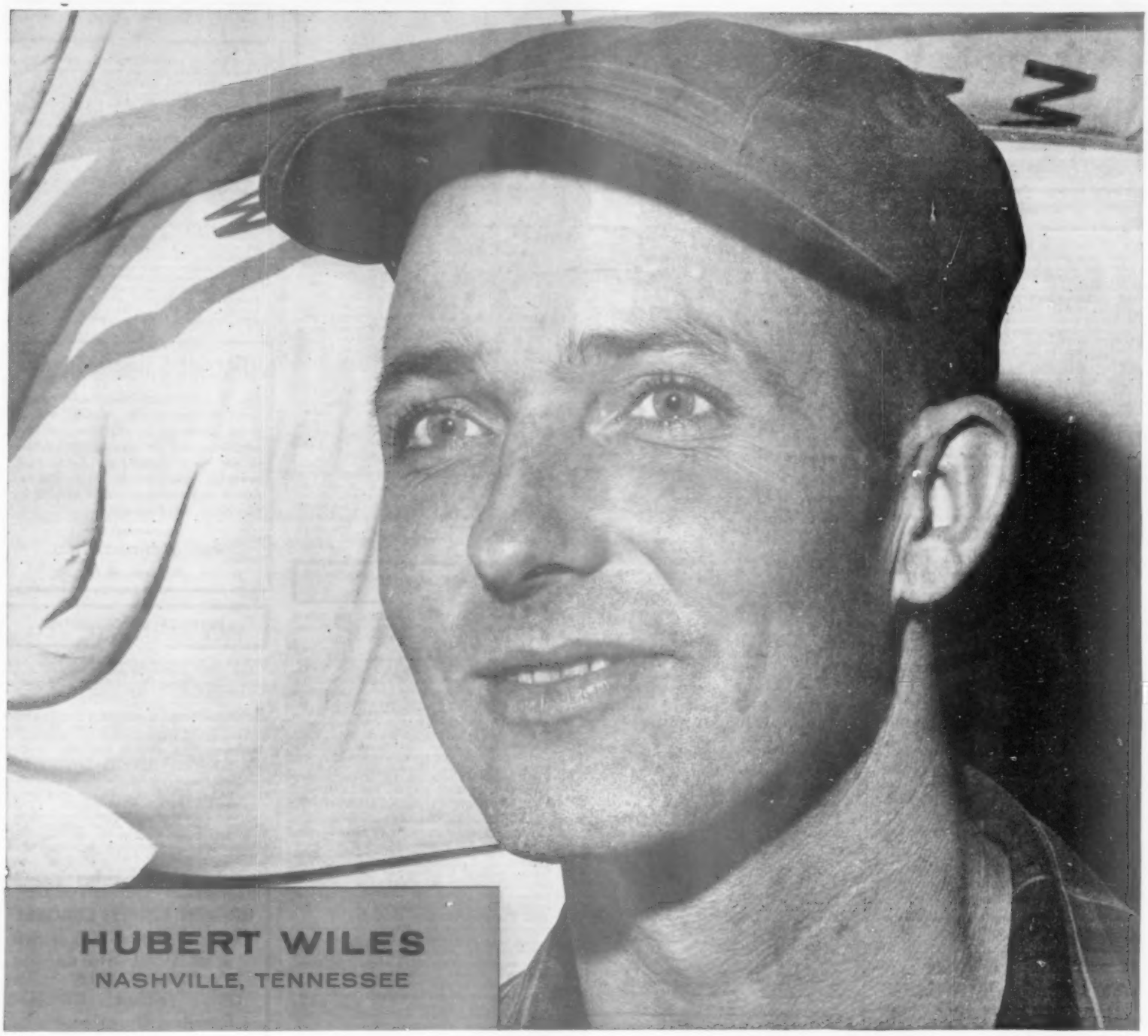
THE V. D. ANDERSON COMPANY
division of International Basic Economy Corporation
1944 WEST 96th STREET • CLEVELAND 2, OHIO, U.S.A.

Only Anderson makes EXPELLERS!

THE BEST ROLLER MILL MADE
W-W crimps, cracks or crumbles every kernel. Has hardened "mill-type" rolls; single control wheel adjustment; heavy cast iron framework. Available in 6" to 36" widths. Sensible time-payment plan.

W-W GRINDER CORP.
DEPT. 311—2957 No. Market Wichita 4, Kans.

Whitmoyer
KEMITRACIN
the purified ANTIBIOTIC complex—that does your feed antibiotic job better!
Send for complete scientific data.
WHITMOYER LABORATORIES, Inc.
MYERSTOWN, PENNA.



"We recommend Morton T-M every time"

In his area, Hubert Wiles does an outstanding job of selling Morton Trace-Mineralized Salt. His sales volume runs about 75 tons of T-M a year and T-M Salt grows increasingly important to his business and profits.

We feel the successful experience of this dealer in selling Morton T-M Salt is of value to all salt dealers. Therefore, we checked with Mr. Wiles and now pass along the "secret" of his sales success. He reports:

"*We recommend T-M Salt to all our livestock feeders.* Once started on T-M they make it a regular part of their feeding program and become steady customers. As a result our sales of T-M grow steadily.

"Any dealer should find Morton T-M a profitable item in his line. It's a quality product and the Morton name, backed by strong advertising, makes it a product that sells easily," Mr. Wiles states.

T-M Salt helps build feed business. When sold for free choice feeding to beef cattle, dairy herds, sheep and hogs, Morton T-M Salt makes all feeds do a better job for livestock raisers. That, of course, means satisfied customers and repeat orders for both T-M Salt and feeds.

If you already handle Morton T-M Salt, take a tip from Mr. Wiles and increase your sales volume and profits. If you would like to add T-M Salt to your line, write Morton Salt Company, Chicago, Illinois.

BACKED BY STRONG ADVERTISING

As a Morton dealer your T-M sales effort is backed by consistent, down-to-earth advertising in leading farm and ranch publications. Radio sales messages also tell farmers and ranchers everywhere the benefits of using T-M Salt. Listen to the Alex Dreier radio show "Topic for Today" every Saturday immediately following the "Farm and Home Hour."

MORTON T-M SALT

☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.

MACHINERY FOR SALE

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jeffreson City, Mo.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

ALFALFA DEHYDRATING PLANT, LATE model Heil, bargain price. Address Ad No. 4235, Feedstuffs, Minneapolis 40, Minn.

IOWA PORTABLE FEED MILL WITH molasses unit on 1957 Ford truck. Donald Danneman, R. R. 5, Muscatine, Iowa.

ALFALFA DEHYDRATING PLANT—GOOD market area. Heil equipment. Address Ad No. 4263, Feedstuffs, Minneapolis 40, Minn.

CALIFORNIA PELLET MILL—NO ELECtrical. Priced for quick sale. Contact: Phil Anderson, Park Drive, Muscatine, Iowa.

DAFFIN MOBILE UNIT — OHIO — 24 months old. Excellent condition, guaranteed, top buy. Address Ad No. 4278, Feedstuffs, Minneapolis 40, Minn.

USED MOISTURE TESTERS BOUGHT AND SOLD

We buy and sell all makes used electric moisture testers. All used instruments carefully reconditioned by trained electronic engineers. Send for our FREE 200 page catalog on grain and feed testing and handling equipment.

BURROWS EQUIPMENT COMPANY
1316-C Sherman Avenue
Evanston, Illinois

NEW MOTORS AT BARGAIN PRICES

If you need motors of these sizes and styles—Here's your buy.

1 H.P., 1200 R.P.M., Tot. Enc.	$ 94.00
1 H.P., 900 R.P.M., Open, Dr. Pr., BB	93.00
1½ H.P., 1200 R.P.M., Open, Dr. Pr., BB	80.00
2 H.P., 1800 R.P.M., Tot. Enc.	106.00
2 H.P., 1200 R.P.M., Open, Dr. Pr., BB	107.00
3 H.P., 1800 R.P.M., Tot. Enc.	124.00
3 H.P., 1200 R.P.M., Tot. Enc.	141.00
3 H.P., 900 R.P.M., Tot. Enc.	156.00
5 H.P., 1800 R.P.M., Open, Dr. Pr., BB	106.00
10 H.P., 1200 R.P.M., Tot. Enc.	291.00
40 H.P., 3600 R.P.M., Dr. Pr., BB	585.00

Limited Number - First Come - First Served

Rebuilt Motors

500 H.P., 1600 R.P.M., Al-Ca., Dr. Pr.	$3,950.00
200 H.P., 3600 R.P.M., G.E., Dr. Pr.	1,800.00
100 H.P., 3600 R.P.M., West., Dr. Pr.	1,100.00
60 H.P., 1800 R.P.M., Lima, Dr. Pr.	650.00
50 H.P., 3600 R.P.M., G.E., Dr. Pr.	600.00
50 H.P., 1800 R.P.M., Lima, Dr. Pr.	600.00

All motor prices quoted f.o.b. destination. Many motors in smaller sizes than those listed at prices as low as 40% of new motors.

REDUCED VOLTAGE STARTERS

2—15 H.P., 220-V., West., ea.	$135.00
1—30 H.P., 220-V., C-H	200.00
1—50 H.P., 440-V., West.	214.00

Many new and used across the line motor starters all sizes—BIG SAVINGS

NEW AND USED V-PULLEYS
NEW V-BELTS
LET US QUOTE YOUR DRIVES—WE CAN SAVE YOU MONEY
All Prices Quoted, Subject to Change Without Notice

THE LIMA ARMATURE WORKS, INC.
130 E. Pearl Phone CA 2-4010 Lima, Ohio

MACHINERY FOR SALE

PELLET MILLS, 50 H.P. CALIFORNIA, with coolers and crumblizer; also Richardson Bagging Scales, animal fat tanks and molasses units. Ray Jones, Box 326, Benton, Ill.

PNEUMATIC "AIR-CONVEYOR" SYSTEMS —Vacuum and Hi-Pressure. Any size or product. Sell or lease, new or used. Also "Do-It-Ur-Self" Bulk Truck Kit, $1,495. Nolder Co., Box 14, Corona Del Mar, Cal.

COMPLETE EQUIPMENT FOR GRINDING suncured alfalfa meal. 224 Fox chopper; totally enclosed 50 H.P. with new dry starter; JB 4W grinder with 75 H.P.; packer with 7½ H.P. motor. All in good condition, ready for immediate operation. J. F. Brady Co., Atkinson, Neb.

FOR SALE—NEW AND RECONDITIONED Richardson, Burrows, O K and Fairbanks bagging scales; Union Special, Minneapolis and Wilcox & Gibbs sewing heads; Whizzer bagging conveyors, bins, motors and mixers; also, engineering service. Winborns' Milling Equipment Service, Williamsburg, Iowa.

SIDNEY NO. 347 SEED AND GRAIN cleaner with 4# screens, 9x15 three pair high roll; Blue Streak 6-A-C hammer mill with crusher-feeder, 75 H.P. direct connected motor; Calking 8-30 slurry treater; Gibson oat crusher, 85 bu. capacity. Write Ad No. 4250, Feedstuffs, Minneapolis 40, Minn.

SALE — ALUMINUM TANKS, 4,000 GAL., 2,100 gal.; Spiral Ribbon Mixers 200, 75 cu. ft.; Dewatering presses: Davenport No. 1A, No. 2A, No. 3A, Louisville 8-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x50', 6'x30', 6'x25'; screw conveyor, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

GENERATOR, ONAN, MODEL NO. 35JT3R, 35 K.W., A.C. 115/230 volt, 60 cycle, 3 wire, single phase. Combination natural gas-gasoline carburetor, automatic line transfer power control of 200 amp. capacity housed in steel canopy. Has been run for only 71 hours. Must sell to make room for larger generator. Make offer. Contact Administrator, Bothwell Hospital, Sedalia, Mo.

REBUILT NO. 7 ACP BLUE STREAK mill for use with 100 H.P. motor; Burton ton size horizontal mixer with TEFC motor; No. 7 AC used Blue Streak mill; this equipment available immediately; can give delivery soon on No. 6AC rebuilt Blue Streak mill for use with 75 H.P. motor; 36" used Diamond Huller attrition mill with two 50 H.P. open motors, 220 V. with blower system, dust collector, 20 H.P. TEFC motor. Phone or write Wadington Feed Mill Supplies, 2300 4th Ave. S.E., Cedar Rapids, Iowa.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

ROTARY DRYER, DIRECT FIRED, 8 FT. diameter, 30 ft. or longer. Also hammermill, 25 to 48 in. opening, complete with 100 to 150 H.P., 3-phase, 220-volt, 60-cycle, 1,800 R.P.M. motor and starter. Address Ad No. 4066, Feedstuffs, Minneapolis 40, Minn.

GOOD, USED ROSKAMP OAT HULLER and flaking unit, 200 BPH or more oat crimper, two upright grain driers of 300 BPH or more capacity. Late type voltage compensator motor starters 50 H.P. up. Address replies to Ad No. 4254, Feedstuffs, Minneapolis 40, Minn.

MISCELLANEOUS

SIMPLEX TIME CLOCK, TYPE B 3, MODel 787, $125; Marchant Calculator, Model B ADX, $350; Tag-Heppenstall Moisture Meter (2 rolls), $250; Steinlite Moisture Tester, Model S, $125. All very good condition. Baltimore Feed & Grain Co., 2341 Boston St., Baltimore 24, Md.

E. H. BEER & CO., INC.

Machinery Division Baltimore 24, Md. Dickens 2-6606

8—Sprout-Waldron No. 227 Perfect Circle Sifters, 2 sieves, each	$ 500.00
1—Eureka No. 7 Receiving Separator, 2,000 bu. cap., Buhler drive	995.00
1—Eureka No. 4 Receiving Separator, 600 bu. cap., eccentric drive	450.00
1—75 H.P. G.E. motor, 900 R.P.M. 220/440, TEFC, explosion proof	1,250.00
7—Sections 12' length, 18" diameter sectional screw conveyor, new, per ft.	10.00
3—Schutte Hammer Mill 12½", without motors; motors extra, each	550.00
2—Sprout-Waldron Horizontal Mixer, 1 ton cap., motors extra, each	500.00
1—Tyler Niagara Vibrating Screen Sifter, 3 H.P. TEFC motor	500.00

We have large stock of flour and seed mill equipment in our Baltimore warehouse. Please ask for list or visit with us.

SITUATIONS WANTED

SALES AND SERVICEMAN WITH EXperience in sales, research, laboratory. B.S. in poultry husbandry and animal nutrition. Southern California preferred. Address Ad No. 4259, Feedstuffs, Minneapolis 40, Minn.

SALES MANAGER—15 YEARS' FEED EXperience; purchasing, milling, nutrition and disease, sales and sales management, ownership. Will relocate. Address Ad No. 4248, Feedstuffs, Suite 3214, 551 Fifth Ave., New York 17, N. Y.

TOP FEED SALESMAN SEEKS NEW POsition. Nine years' experience full line and broiler feed sales. Familiar with credits, freight, feeding programs, bulk grinding and mixing and broiler deals. Good dealer closer. Will move. Address Ad No. 4243, Feedstuffs, Minneapolis 40, Minn.

EXPERIENCED SALES MANAGER WITH proven ability to organize, train and direct successful sales force. Good writer. Ability to create and promote programs that sell. Degree in animal husbandry. Best references. Address Ad No. 4265, Feedstuffs, Minneapolis 40, Minn.

HELP WANTED

ACCOUNTANT WANTED—MUST BE TOPS in knowledge feeds, credits, etc. Write or phone Harry Levin, Seed-Feed Supply Co., Chattanooga, Tenn.

SALES MANAGER WANTED FOR MIDwest feed mill. Prefer recent college graduate with feed sales background. Excellent opportunity. Address replies to Ad No. 4227, Feedstuffs, Minneapolis 40, Minn.

BASIC MANUFACTURER OF POULTRY pharmaceutical and nutritional products desires Delmarva representative. All replies confidential. Write Ad No. 4234, Feedstuffs, Minneapolis 40, Minn., listing full personal information and qualifications in first reply. College graduate preferred.

TERRITORY MANAGER WANTED — WE are looking for a man who can sell both in the country and at dealer level. East central Kansas territory. Must have following and is now or has recently been active in formula feed sales. Salary, bonus, car allowance, expenses. Contact Sales Manager, Quisenberry Mills, Inc., 8521 Prospect, Kansas City, Mo.

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around central or southern Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 4266, Feedstuffs, 612 Board of Trade Bldg., Kansas City 5, Mo.

PLANT MANAGER TO SUPERVISE PROduction, procurement, traffic (including trucking), nutrition and have some experience in cost analysis for modern feed mill of 250-ton, 16-hour daily capacity located in Oklahoma. 35-50 age range. Starting salary not in executive bracket but can develop to that level with this particular plant shipping to number of company-owned bulk stations. Send brief 10-year experience resume, picture if available, and give current salary and name of present employer. You can be assured all information will be held in strictest confidence and present employer will not be contacted without applicant's specific approval. Address Ad No. 4284, Feedstuffs, Minneapolis 40, Minn.

WANTED EXPERIENCED SALESMEN

Full time or sideline for textile bags, both new and reconditioned. Salary commensurate with ability. All replies confidential. Contact

GENERAL BAG & BURLAP CO.
3435 Melvale Street
Philadelphia 34, Penna.

SALES TRAINEES

Recent graduates with major in Poultry or Animal husbandry who have interest in selling feed additives to feed manufacturers. Good opportunity with established expanding firm with active research and product development program. Send resume and indication of academic record to:

Department D
NOPCO CHEMICAL CO.
Harrison, N.J.

HELP WANTED

EXCELLENT SIDE-LINE OR FULL TIME item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 8, Mo.

SALESMEN WANTED—MEN CALLING ON feed dealers and elevators to carry well-established calf milk replacer as side line. Top commissions for the right men. Several established territories open. Write Box 5020, Minnehaha Station, Minneapolis, Minn.

EXTRA INCOME FOR FEED SALESMAN —No selling, simply leave keyed literature at elevators and other feed dealers you contact, on sensational new low cost feed handling equipment manufactured by reliable, long-established firm. You get a check for $40 or more for every sale traced to the keyed literature you have handed out. Write today. Address Ad No. 4261, Feedstuffs, Minneapolis 40, Minn.

District Sales Manager

This is an unusual opportunity to assume a responsible position with a major producer of vitamins and feed additives with an established position in the feed supplement field. Sales program supported by aggressive research and active technical service for customers. Send resume to:

Department D
NOPCO CHEMICAL CO.
Harrison, N.J.

BUSINESS OPPORTUNITIES

FOR SALE — GRAIN ELEVATOR AND feed mill. Inquire Woodhull Co-op. Grain Co., Woodhull, Ill.; Phone YEllowstone 4-3711.

BROKERS — SOME GOOD TERRITORIES are now open for selling new nationally advertised popular silage preservative to jobbers. Good volume potential. Address Ad No. 4267, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — GRAIN, SEED CLEANING warehouse and elevator, including all machinery. Located on Milwaukee Railroad, Genoa, Ill. Capacity approximately 100,000 bu. Perfect condition, 10 years old. Mrs. Kenneth Furr, 220 S. Emmett St., Genoa, Ill.; Phone 4-2365.

Contact—
MID-WEST BUSINESS EXCHANGE
When you want to Buy or Sell
ELEVATORS or
FEED MILLS
Ohio - Indiana - Illinois
Excellent Opportunities
Halbert C. Smith Plymouth, Ind.

Cooperatives Called Answer to Integration

DES MOINES — Howard Cowden, president of the Consumers Cooperative Assn., Kansas City, pointed to vertical integration as a threat to individual farmers unless they take advantage of the increased efficiency available to them.

"As farmers, we have failed to coordinate production and marketing," he said in an address to central Iowa farm supply cooperative managers. He pointed to the broiler industry as one example of integration, and also the swine industry, which he said is now following in the same trend.

"The big question is whether producers are going to take steps to get the benefits of efficiency through cooperative organizations or let the processors and distributors get the benefits," he said. The Consumers Cooperative Assn. is helping cooperatives set up boar testing stations at Ida Grove and Eagle Grove, Iowa, as the first step in developing an integrated swine industry, he pointed out.

Mr. Cowden reported that the manufacturing operations of the cooperative association he heads totaled $129 million in the fiscal year ended Aug. 31 and the cooperatives in Iowa purchased $19 million worth of petroleum, feed and fertilizer supplies in the year.

COSBY-HODGES SAFETY FLEET — Photographed at their monthly safety meeting are drivers and their "co-pilots" from Cosby-Hodges Milling Co., Birmingham, Ala. In a total of 601,863 miles covered from October, 1957, to October, 1958, 19 of the 22 senior drivers had perfect safety records. Eight of these had five full years, from 1953 to 1958, with a perfect score.

Safety Plans Pay Off In Fewer Accidents For Alabama Firm

BIRMINGHAM, ALA.—The result of a driver-safety program at Cosby-Hodges Milling Co. in Birmingham, Ala., has been cited to show the effectiveness of planning and follow-through in such a program.

Any company with a fleet of delivery trucks, it is noted, can profit from Cosby-Hodges' experience — their methods reduced road accidents from 11 driver-responsible collisions in 1953, to 3 accidents in 1958, all of which were listed as "unavoidable" by Alabama State Highway Patrol investigators.

Directed by Grady K. Burks, superintendent of Cosby-Hodges' shipping facilities, the program was started in October, 1953, and features a safety award plan with monthly cash bonuses on a cumulative basis for six-year periods. A driver with a perfect safety record for 12 months receives the 12 monthly bonuses, and another full year's perfect record doubles the yearly bonus, on up to a total of $60 for the current year 1958.

As an indication of the plan's workability, 19 of the company's 22 drivers had a perfect year in 1958, with eight of these men earning a perfect safe-driving record for the whole five-year span from 1953 to 1958. These records are considered even more impressive when fleet mileage records disclose a total of 601,863 miles driven, in 1958 alone.

Cash incentive is not the only feature of the safety program, however. An almost tangible "team spirit," it is said, insures more enthusiastic cooperation from employees than many an organization can expect for such a plan. Mr. Burks conducts regular monthly safety meetings with all the drivers and helpers, and he gives great credit to the Alabama State Highway Patrol and the Birmingham Police Department safety director. Both have had officers represented at the safety meetings, several times during the year, and they have encouraged the mill's program, educating the drivers toward top safety performance.

Each Cosby-Hodges driver sees the words "Courtesy is Contagious" on a windshield sticker in his truck. All credit for courteous behavior cannot, of course, be attributed to a windshield sticker, but it is true that the mill constantly receives calls and correspondence mentioning the unusual courtesy of Cosby-Hodges drivers.

Cosby-Hodges driver-training program is also designed to keep experienced, expert operators behind the wheel at all times. Each man has a "co-pilot," a junior helper who is entrusted with more and more responsibiilty as he learns the company policies and shows increased proficiency in handling the big trucks. In this way, the mill keeps in training a potential crew of operators equal in number to the senior drivers.

Canada Tests Define Salt Poisoning in Pigs

TORONTO, ONTARIO—According to a report from the Ontario Department of Agriculture, recent studies have shown, apparently for the first time, that salt poisoning in pigs is a clear-cut and easily recognizable condition affecting the animal's tissues. The report mentioned that some of the symptoms of the condition resemble other diseases, thus making proper diagnosis important.

"The Ontario Veterinary College says that salt poisoning develops when a high level of salt is given to pigs without an increase in drinking water. Symptoms include blindness, twitching of nose and neck muscles, circling or running, and eventually unconsciousness," the department of agriculture report said.

"Experiments at the Ontario Veterinary College have indicated that salt poisoning was most easily produced when water was severely restricted. The condition did not occur at all when fresh water was available continuously."

Record Feeder Prices

CORVALLIS, ORE. — Some 605 head of feeder cattle sold for an all-time average high of $28.66 cwt. at the recent annual western Oregon feeder cattle sale at Brah's auction yard, Corvallis, reports C. W. Mann, Corvallis, sale committee chairman. Two hundred forty seven steer calves averaged $31.53 cwt. and averaged 412 lb. per head while 249 heifer calves averaged $28.55 cwt. with a 390 lb. a head average.

FEED STORE OPENS

CLEAR LAKE, IOWA—Jack Brimer has opened Jack's Feed Supply here. He is a dealer in Wayne Feeds. Mr. Brimer was in the feed business in Mason City six years before moving to Clear Lake.

Trend to Bigger Feed Outlets for Inedible Fats Continues in '58

WASHINGTON — The upward trend in the use of inedible fats in livestock trends is continuing this year, the U.S. Department of Agriculture reports.

Census figures indicate that use of fats for feeds in 1957 was 30% higher than in 1956 and data available so far in 1958 shows that the upward trend is continuing.

The result is that farmers themselves are using up much of the surplus fats they produce, and in doing so they obtain an improved type of highly nutritious feeds.

The sharp increase in the use of fats was found by researchers of the Marketing Research Division in a survey of practically all feed manufacturers of the U.S. The survey reveals that use of fats and oils in prepared animal feeds more than doubled between 1954 and 1956.

Of the 324 million pounds of fats and oils used in prepared animal feeds in 1956, 300 million pounds were tallow and grease. The feed industry used about 18% of all the inedible tallow and grease consumed in the U.S. in 1956. Only the soap industry provided a bigger outlet.

Producers of inedible fats did not have this outlet prior to 1952, because mixed feeds containing added fat were practically non-existent before that year. Problems of oxidation and rancidity of fats had to be worked out by the USDA's Eastern Utilization Laboratory and others before growers, livestock feeders and manufacturers of mixed feeds could benefit.

Vineland to Start West Coast Expansion

VINELAND, N.J.—Vineland Poultry Laboratories, Vineland, will begin expansion of its West Coast facilities with the appointment of George Blackburn, to its offices in Los Angeles.

Mr. Blackburn's immediate assignment will be establishment of manufacturing facilities in California to help service 11 western states. Up to this time, all manufacturing of Vineland Poultry Laboratories' line has been done in the eastern laboratories at Vineland, N.J.

Don M. Taylor will remain in charge of the Vineland West Coast office.

Just heard of a busy exec who went to a psychiatrist and complained he found little men running around under his bed every night. The doctor shook his head ominously. "This is a very serious problem," he said. "It may take years of analysis. Let me know when you are ready to start."

Some weeks later the analyst ran into the exec and asked why he'd never returned. "Well I just couldn't afford the time, doc," said the exec, "so I got rid of those little men by myself. I cut the legs off my bed."

◆ ◆ ◆

A New York psychiatrist met his old friend, Sam, and asked him how things were going.

"Not so good," Sam replied. "My brother is very sick."

"Your brother isn't sick," contradicted the psychiatrist. "He only thinks he's sick. Remember that, he only thinks he's sick."

Two months later they met again and the doctor asked:

"How's your brother now?"

"Worse," Sam groaned. "He thinks he's dead."

◆ ◆ ◆

"I just saw your family ghost upstairs," gasped a man who was visiting an old mansion.

"Did it give you a start?" asked his host.

Replied the guest, "I didn't need one."

◆ ◆ ◆

A man came in the other day to borrow a globe for his son. The boy was studying the United States, so that's what daddy asked for—a globe of the United States.

◆ ◆ ◆

The old country doctor parked his car, a Model T Ford, in front of the drug store and went in to buy a few supplies.

When he came back out a large crowd of small boys was standing around his old car and laughing loudly at it. The doctor climbed into the seat and said in a mild tone of voice:

"The car's paid for, boys." Then he looked deliberately from one boy to another. "You're not, you're not . . . you're not."

Have you heard the latest?

. . . She worked overtime *again* last night at milking time. Must be that Silage with SILO-JOY® forage flavor preservative that she's eating.

FLAVOR CORPORATION OF AMERICA
3037 North Clark Street • Chicago 14, Illinois

The Feed Man's Library

Reader Service Department

Feedstuffs

FEEDS AND FEEDING, 22nd Edition

By Frank B. Morrison and Associates

Feeds and Feeding has again been entirely revised, because of the many discoveries made in nutrition and livestock feeding. In this 22nd edition, particular emphasis is placed on the new developments. The numerous experiments are summarized which have dealt with antibiotic, arsonic and surfactant supplements, and with hormones, including stilbestrol. Full information is given concerning requirements of various classes of stock for the vitamins, including B and the unidentified factors. The Appendix Tables are enlarged by 40%, with composition and digestible nutrients of 1,100 feeds **$9.50**

ANIMAL NUTRITION, 4th Edition (1956)

By Leonard A. Maynard

It covers the standard, constantly-needed facts on feeding farm animals, and also the newly discovered facts about how certain acids, minerals, vitamins, etc., can help in raising healthier, more productive animals.
474 pages, 77 illustrations and tables **$7.50**

BEEF CATTLE, 4th Edition

By Roscoe R. Snapp

Covers breeding, feeds, feeding, economic trends, equipment, etc. Includes a report of hundreds of feeding experiments. Has a special chapter on sterility by Dr. Harry Hardenbrooks, Jr., assistant professor of veterinary medicine, University of Illinois. 641 pages **$6.50**

IN-PLANT COST STANDARDS

1956 Feed Production School Transcript, Sponsored by Midwest Feed Mfrs. Assn.

This 220-page book will enable you to analyze the operations in your feed mill plant with an eye to reducing operating expenses in eight major cost centers: ingredient receiving, grain processing, mixing, pelleting, packing, warehousing, high molasses handling and maintenance. It contains a comprehensive and well-diagrammed report on in-plant cost standards.... **$15.00**

(If both "In-Plant Cost Standards" (listed above) and "Warehousing Operations" (listed below) are desired, the total price for the two books is $25.00.)

WAREHOUSING OPERATIONS and Tables of Standard Times

1957 Feed Production School Transcript, Sponsored by Midwest Feed Mfrs. Assn.

180 fact-filled pages with charts, graphs and tables prepared for practical application to your own mill operation . . . complete results of detailed research investigations into the largest single cost factor of the modern mill, warehousing and bagged-feed handling operations **$15.00**

RAISING LIVESTOCK

By Walter H. Peters and G. P. Deyoe

This book provides the owner, manager or caretaker of farm or ranch with easily found, specific suggestions for solving problems confronted in producing, handling and managing livestock, including preparing for market, selecting, feeding, housing, breeding and marketing influences. It tells of the many jobs to be done and exactly how to do them. 519 pages, 240 illustrations..... **$7.50**

DAIRY CATTLE FEEDING and MANAGEMENT, 4th Edition

By H. O. Henderson and Paul M. Reaves

Based on the original work by Carl W. Larson and Fred S. Putney. Expanded 10%, the Fourth Edition adds new chapters on minerals and vitamins, and much recent material on hay-crop silage, grass land farming, dairy cattle health programs, and digestion in the rumen and milk secretion. Designed for use profitably by the student and the practicing dairyman. 614 pages..... **$6.50**

SWINE SCIENCE, 2nd Edition (1957)

By M. E. Ensminger, Ph.D., State College of Washington, Head Department of Animal Science

A complete yet easily understood reference for swine feeders, breeders and those in auxiliary services to them. Covers history and development of the industry, its distribution, adaptation and future; types and breeds, establishing the herd, meat type breeds, selection and judging, breeding, feeding, grains and high energy feeds, protein, vitamin and milling by-product feeds, pastures, buildings and equipment, health and disease prevention, marketing and slaughter, management and showing. 543 pages, 192 illustrations..... **$5.00**

SWINE FEEDING AND NUTRITION (1957)

By T. J. Cunha, Department of Animal Husbandry and Nutrition, University of Florida

A new text for feeders, teachers of animal husbandry and their classes, county agents, nutritionists and workers in veterinary pharmaceuticals. Dr. Cunha is head of the Department of Animal Husbandry, a member of the Nutrition Committee of the American Society of Animal Production and the Swine Nutrient Requirements Committee of the National Research Council. The book includes reports on the most recent scientific feeding studies on swine.
300 pages, 47 tables, 46 illustrations **$5.00**

SWINE PRODUCTION, 2nd Edition (1956)

By W. E. Carroll and J. L. Krider

A guide to organization, establishment, management, feeding and marketing operations in raising of hogs. 498 pages, 65 illustrations... **$7.00**

RAISING SWINE—

By George P. Deyoe

A practical swine raiser's handbook. Stock selection, record keeping, feeding, care and handling, marketing techniques and preparing pork for home use. 447 pages, 201 illustrations, 40 tables **$6.95**

THE HANDBOOK OF FEEDSTUFFS (1957)

By Rudolph Seiden and W. H. Pfander

An encyclopedic presentation of production, formulation and medication. Designed to increase feed efficiency, explaining thousands of terms. Valuable to ranches and farms in production of feeds from right crops, utilization of plant as pasture, silage, hay, etc., and as an officially recognized feed product (meal, bran, grit, cake, etc.). Explanations and practical advice on medicated feeds, mineral feedstuffs, trace elements, growth stimulants and chemicals of importance to stockmen and poultry growers. Useful to feed manufacturers, nutritionists, students of animal biology, etc. 600 pages, 175 illustrations, cloth binding **$8.00**

THE STOCKMAN'S HANDBOOK (1956)

By M. E. Ensminger, M.S., M.A., Ph.D.

Intended for stockmen, those who counsel with stockmen and for teachers in animal agriculture. First 120 pages particularly of interest to feed trade, as breeding and feeding of livestock are covered. Other chapters have to do with judging, management, marketing, etc. The 1956 edition is the fourth printing, indicating strong demand for this guide. 598 pages, well illustrated, many tables. A practical handbook **$8.50**

MANAGING FOR GREATER RETURNS in Country Elevator and Retail Farm Supply Businesses

By Richard Phillips, Iowa State College economist

Written as a basic reference book for elevator and farm store managers, this book includes valuable information on over-all planning and management. Some of the topics included are planning for maximum business efficiency, use of an effective accounting system, increasing employee productivity, improving customer relations, improving purchasing, management of credit and operation of custom services. 500 pages **$7.00**

SCIENTIFIC FEEDING OF CHICKENS (1955)

By Dr. H. W. Titus

A small but absolutely authentic and concise treatment of vital information for feeders and feed manufacturers. 43 formulas for diets and mashes, vitamin content of over 60 feedstuffs; what feedstuffs are best, deficiency diseases; also relationship between feed consumption and egg production.
297 pages, hard binding **$4.00**

THE GRAIN TRADE: How It Works (1956)

By James S. Schonberg, Vice President, Uhlmann Grain Co.

A comprehensive book on the mechanics of merchandising and trading in cash and grain futures in the U.S. and Canada. Tells of what happens to grain following its purchase from the farmer, how it is graded, stored and conditioned, the establishing of price even before the crop is planted, the role of the university professor in the grain trade. This authoritative book will become the leading reference book on this subject for farmers, county agents, legislators, foreign buyers, government personnel, teachers, etc..... **$6.00**

FEEDING POULTRY, 2nd Edition

By Gustave F. Heuser, Professor, New York State College of Agriculture, and the School of Nutrition

Meets the needs of poultry producers, feed dealers and poultry students for the latest authoritative information on how to raise the best poultry by employing modern feeding methods. It evaluates findings on the value of feeds, types of feed to be used and nutritive economy. Deals with feeding and management for various purposes, chicks, breeders and egg producers. 632 pages... **$7.95**

POULTRY NUTRITION, 4th Edition Revised and Enlarged

By W. Ray Ewing

1,500 pages, 133 illustrations, of practical, factual information for feed manufacturers, feed dealers, hatcherymen, breeders. New chapter on antibiotics, new growth charts, feed formulas for rapid growth..... **$12.50**

POULTRY HUSBANDRY, 3rd Edition

By Morley A. Jull

526 pages, 254 illustrations, covers all aspects of the poultry business, from planning and building poultry plant to preparing poultry products for market. Breeding techniques, feeding procedures, disease control, incubation; it is an "encyclopedia" of poultry raising **$6.50**

POULTRY PRODUCTION—

By Leslie E. Card, Ph.D.

Eighth Edition, 416 pages, 216 illustrations and four plates. Deals with broiler production, flock management and marketing, breeding and selection, nutrition, disease control, etc. **$5.00**

HATCHERY OPERATION AND MANAGEMENT

By Ernest F. Funk and M. Richard Irwin

New, 1955; a practical guide to hatchery operation for the experienced and inexperienced. Covers all phases of the business, including advertising, selling, office procedure, labor costs, equipment, chick selection, sexing, etc. 350 pages, well illustrated **$7.50**

SUCCESSFUL POULTRY MANAGEMENT, 2nd Edition

By Morley A. Jull

447 pages, 188 illustrations, based on practical experience, brings practical helps for choosing breeds, increasing broiler and egg production, building range shelters, estimating egg output, buying feed, candling eggs, etc. **$5.75**

KEEPING CHICKENS IN CAGES, 4th Edition (1956)

By Roland C. Hartman, Editor Pacific Poultryman and Dale F. King, Dept. of Poultry Husbandry, Alabama Polytechnic Institute

A thorough revision of this reliable work on cage laying plants. Newly illustrated and broadened in scope with addition of Professor Dale F. King as co-author. More about feeding-results of experiments with caged layers. The importance of protein and energy levels for the highly bred producing stock. 304 pages, 176 illustrations, cloth bound **$5.00**

TURKEY MANAGEMENT, 6th Edition (1955)

By Stanley J. Marsden and J. Holmes Martin

A text on turkey raising and marketing by Stanley J. Marsden, Poultry Husbandman at the U.S. Research Center, Beltsville, Md., and J. Holmes Martin, Head of the Poultry Department, Purdue University. Covers breeding, rearing, feeding, preparation for the market, shows, diseases and their prevention and control. 1,000 pages, 124 illustrations **$7.00**

THE FEED MIXERS HANDBOOK, 2nd Edition (1956)

By Ross M. Sherwood

A text for feed mixers with special reference to the nutritional aspects of feed formulation. A practical handbook for practical men.
208 pages, cloth bound **$3.00**

No C. O. D.'s

ORDER FROM

Reader Service Department
Feedstuffs
P.O. Box 67
Minneapolis 1, Minn.

WASHINGTON

(Continued from page 7)

tity of the specific enzyme(s) involved in the improved utilization of cereal grains. Some of the more common enzymes, such as alpha amylase, known to exist in preparations that are active, have been eliminated.

"No specific laboratory test for enzyme activity has been shown to correlate with chick activity of enzyme preparations, and the only reliable assay for an enzyme preparation to be used in upgrading cereal grains is by chick assay," Dr. Jensen said.

Barley Comparisons

Experiments on the comparison of barleys produced in different parts of the U.S. and Canada were reported. Previous experiments had shown that several different varieties produced at the Washington experiment station were uniformly inferior for supporting chick growth when unsupplemented, and all were significantly improved by enzyme supplementation or water treatment. Therefore, the lack of response to enzymes in some areas could not be explained on the basis of difference in barley varieties.

Barleys produced in Washington, Oregon, North Dakota and Wisconsin were significantly improved by enzyme supplementation, but others produced in New York, Ontario, Arkansas and Minnesota were unimproved. On the other hand, all barley samples, regardless of area of production, were significantly improved by water treatment. Dr. Jensen said that water treatment of barley routinely gives better results than addition of dry enzyme preparations. He indicated that it may be possible to develop new enzyme preparations which will more nearly approximate results obtained by water treatment.

Enzyme for Layers

Dr. Berg discussed enzymes for laying hens. In two different experiments conducted at the Western Washington experiment station, no significant improvement in egg production, feed efficiency, or body weight gain was obtained by addition of enzymes to laying rations containing barley. "Even though we have been able to show little or no benefit from adding enzymes to barley rations for hens, there have been some favorable reports from Wyoming and Utah," Dr. Berg said.

Bloat Research

Dr. I. A. Dyer, department of animal science, State College of Washington, reviewed the latest information on bloat. He said annual loss due to bloat is $40 million in the U.S. alone, and that many experiment stations are working on different aspects of the problem. Many preventives and therapeutics for bloat have been advocated, Dr. Dyer said, but bloat preventives are not being widely used. "We do not know the basic cause of bloat, so it is difficult to effect a preventive for something we cannot define," he said.

Studies on the identification of toxic factors in alfalfa and other feed materials that may be responsible for causing bloat are underway at the State College of Washington.

Pullet Rations

A discussion of protein and energy levels for growing pullets marked a second appearance on the program of Dr. Berg. He summarized three studies conducted during the last four years to determine the effect of protein and energy level of developing rations on growth rate, feed efficiency and sexual maturity of White Leghorn pullets.

Both all-mash rations and rations involving free-choice selection of milo and a mash feed were studied. Giving pullets access to whole milo caused a delay of 2-4 days in reaching 50% production. Protein intake of the birds ranged from 12-19% in the experiments, and energy levels also varied widely.

"White Leghorn pullets raised in confinement will develop normally on feeds which vary a great deal in protein and energy content," Dr. Berg said. "Apparently the protein requirement of poultry is not as high as previously thought." He said that the calorie-protein ratio is not an important factor in formulating rations for developing pullets.

A new feature of the conference this year was a series of nine 8-min. progress reports on research being conducted at the Washington experiment stations. Following are brief summaries of these reports:

"Survey of Trace Mineral and Vitamin A Nutrition for Beef Animals" — Dr. Dyer: Blood and liver samples from beef cattle and soil samples were taken at different locations and seasons during the past two years in Washington. Preliminary results did not reveal any vitamin A deficiency problems, but showed that copper is quite deficient in various areas of Washington.

"Factors Affecting Rate of Grain Consumption by Lactating Dairy Cows"—Dr. T. H. Blosser, dairy department, Pullman, and F. R. Murdock, dairy department, Puyallup: With the advent of milking parlors and emphasis on rapid milking, the rate at which a cow can consume grain has become a factor of considerable interest to dairymen. An experiment was conducted at WSC to compare concentrate eating time of cows when given ground and pelleted concentrates. Good producing cows can increase their grain eating rate by .2 lb. per minute when given the concentrate in pellet form. The test was not long enough to determine the effect of pelleted concentrate on fat content of the milk.

"Feeding Tests With New Antibiotics"—Dr. L. S. Jensen, Washington Poultry Science Department: Results previously reported which showed growth stimulation in the WSC laboratory was not being obtained from common antibiotics long used in feed formulation were generally confirmed. It was found, however, that when higher levels of antibiotics such as penicillin and Terramycin were used, a growth response was generally obtained. In addition to erythromycin and oleandomycin, other antibiotics never before used at WSC such as zinc bacitracin, bacitracin, vancomycin and atteramin have shown activity.

"Pelleted Roughages for Beef Cattle"—Dr. Dyer: At other experiment stations, pelleted roughages have generally increased the rate of gain of beef cattle over that of animals fed unpelleted roughage. A feeding trial at WSC showed that pelleted roughage (in a fattening ration) increased gain from 0 to .31 lb. per animal per day.

"New Lighting Information for Broilers"—J. V. Shutze, Washington poultry department: The results of several broiler studies conducted at WSC showed that birds exposed to continuous light gained about 0.25 lb. more in body weight than birds exposed to 12 hours of alternate light and darkness. Birds under continuous light, however, were more subject to non-specific enteritis and had eyes that were greatly flattened and enlarged in size. Age of sexual maturity and rate of egg production were observed for New Hampshire pullets exposed to continuous light or 12 hours of alternate light and darkness for the first eight weeks of growing period, and to the same lighting conditions thereafter. Sexual maturity was delayed and rate of production was depressed in those birds subjected to continuous light during their brooding period.

"Unidentified Growth Factors in Soybean Oil Meal"—Dr. Berg: During the past 10 years, several reports have appeared indicating the presence of unidentified growth factors in soybean oil meal. Some of these reports have been based on results with natural diets, and some with purified type diets. Studies at the Western Washington experiment station, in which soybean oil meal was substituted for an isolated soybean protein, have further demonstrated the presence of some unknown factor in soybean meal which stimulates the growth of chicks.

"Protein Requirement and Unidentified Factor Supplements for Turkey Breeders"—Dr. Jensen: An experiment was conducted comparing protein levels of 10, 12, 14 and 16% for turkey breeders. Fairly good results were obtained with all diets, but slightly better hatchability of fertile eggs and egg size were obtained with rations containing 12% protein or higher levels. Following completion of the protein study, turkey breeders were switched to a study involving unidentified factor supplements. The basal diet consisted of corn and soybean oil meal plus vitamin and mineral supplements. Dehydrated alfalfa, dried whey, herring fishmeal and dried brewers' yeast were added individually to the basal diet at the 5% level. In addition, one treatment consisted of all four supplements. Hatchability of fertile eggs was not improved to any extent by any of the supplements fed individually, except possibly by dried whey. When all four supplements were included in the ration, hatchability was improved about 10% over the basal diet during the last eight weeks of the experiment.

"Tranquilizers for Beef Cattle"—Dr. Dyer: Two experiments in which hydroxyzine was fed have been conducted at WSC. One test under feedlot conditions resulted in an increase of .31 lb. gain per steer per day. The other test under laboratory conditions (no shipping, inoculations, etc.) did not show any benefit from hydroxyzine. Response to hydroxyzine apparently is proportional to the stress imposed on cattle.

"How Nutrition and Management Affect Blood Spots in Eggs"—G. E. Bearse, poultry department, Puyallup: Experimental work has shown that the incidence of blood spots may be influenced by dietary vitamin A, percent protein, energy content and antioxidants in the feed. Most recent experiment conducted at the Western Washington experiment station again showed that a level of 6,000 I.U. vitamin A per pound resulted in significantly less blood spots than obtained with a diet containing 3,000 I.U. per pound. Management studies have shown that unexpected disturbances increased blood spots temporarily, but in a short time the birds become adjusted to the disturbances and the incidence of blood spots goes down. Housing birds in individual cages results in considerably more blood spots than when hens are housed in group cages or on the floor.

Twin City Nutrition Seminar Will Meet

ST. PAUL—The Twin City Nutrition Seminar will meet at 7:30 p.m. Nov. 18 to discuss vitamin E and selenium. The meeting will be held at Peters Hall, St. Paul campus, University of Minnesota. Myron Carpenter, Peavey Feed Mills, Minneapolis, will serve as chairman.

J. Wesley Nelson, Cargill, Inc., Minneapolis, secretary, announced a program of three speakers. They are: Dr. L. E. Hanson, head of University of Minnesota animal husbandry department; Dr. George Briggs, Federal Security Agency, Public Health Service, Bethesda, Md., and Dr. R. M. Jordan, University of Minnesota animal husbandry department.

The speakers will discuss the general topic as applied to swine, poultry and lambs, respectively.

$12,500 GRANT

LEXINGTON, KY. — The University of Kentucky has received a $12,500 grant from the Kentucky Department of Economic Security for completion of a swine-testing station.

Ray Riggenbach

ASSISTANT MANAGER—Ray Riggenbach has been appointed assistant manager of the production division of Dannen Mills, St. Joseph, Mo. Mr. Riggenbach, Clovis, N.M., has previously been associated with the Kansas Soya Co. and General Mills, Inc. He has had experience in soybean processing, feed manufacturing and elevator operation. Dwight L. Dannen, company president, said the new post was being created because of expansion of the frm's storage and milling facilities. Mr. Riggenbach will work with George O. Lines, vice president of the production division.

PELLETING

(Continued from page 8)

The survey showed that of the panel members who have beef cattle, 3.4% reported feeding a complete pelleted ration during the past year; for the coming year, 4.4% said they would be feeding such a ration.

Sheep producers are evidently even more interested. Of the panel members who have sheep, 7.1% reported feeding a complete pelleted ration during the past year, and for the coming year 9.5% said they would be feeding a complete pelleted ration.

"Fewer tests have been made with straight wafered hay, and at this time it is not possible to say that the form of the material will materially affect the feeding results. However, the labor and space saved (one third to one fourth the space required for baled hay) certainly are strong incentives to field wafering or pelleting. Development in this field has been rapid and it appears likely that at least one machine of this type will be available within a year or two," according to the Doane survey report.

A large percentage of the panel members reported that pelleted feeds of some type comprise a part of the ration for their various classes of livestock. The following table shows the percent of the panel members who fed some pelleted feeds during the past year, compared with their pellet feeding intentions for the coming year:

Class of livestock	Per cent feeding some pellets past year	Per cent indicating pellet-feeding intentions for the coming year will feed	undecided
Beef	46	45	27
Dairy	33	29	24
Hogs	75	70	19
Sheep	30	31	32

The survey pointed out that bagged commercial feed is still the most common form of purchased feed as compared with bulk. Of the panel members who reported buying a commercial feed for their beef cattle, 86% said a majority of their purchases were bagged, versus the 14% who indicated bulk. For the other classes of livestock, the tabulations were as follows: dairy, 87% bagged versus 13% bulk; hogs, 86% bagged versus 14% bulk; sheep 88% bagged versus 12% bulk.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand light; supply good; 400 D, 3,000 A 20¢ lb.; 300 D, 3,000 A 19¼¢; 300 D, 1,500 A 18½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17½¢; 300 D, 750 A 14⅝¢; 75 D, 750 A 14½¢.

Denver: Demand fair; trend steady; supply good; 2,250 A, 300 D 21¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15⅛@17¢, 2,250 A 17½@20¢, 3,000 A 19⅛@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

ALFALFA MEAL

Los Angeles: Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $49; dehydrated pellet meal, 17% protein, 100,000 A $51; suncured crumbles, 15% protein $43@44; suncured meal, 15% protein $41@42.

Portland: Demand good; supply ample; trend unchanged to higher; 15% suncured $40; dehydrated $66.

Boston: Demand improved; supply adequate; dehydrated, 17% $60.50; suncured, 13% $48.

Omaha: Demand steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50, Omaha basis.

Philadelphia: Demand and supply fair; 17% dehydrated $60.50.

Denver: Demand good; trend firm; supply ample; dehydrated $44.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59.50@63.

Kansas City: Demand improved; trend stronger with demand picking up and production over; supplies adequate; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival, unprocessed meal $49 with very little available; reground pellets $50, sacked; oiled meal $52, sacked; pellets $44@45, bulk; non-guaranteed A meal 17% protein $44, nominally; suncured meal demand is slightly improved, supplies adequate, No. 1 fine ground $34, No. 1 ¼-in. $32.50@33, No. 2 ¼-in. $30.50@31, sacked.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $55@55.50; 13% No. 1 fine ground $42.

Ft. Worth: Demand fair; supply sufficient; 17% protein dehydrated $55, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $58.80, rail; suncured $39, truck.

Minneapolis: Steady trend; good demand; good supply; 17% dehydrated, 100,000 units vitamin A, reground pellets, bulk $51; oiled reground $53.

Memphis: Demand fair; trend steady; supply scarce; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $55.

Buffalo: Demand and supply fair; trend steady; $61, Boston.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

St. Louis: Demand slow; trend steady; supply ample; 13% fine suncured $39.50; dehydrated, 17%, 100,000 A $55.

ANIMAL FATS (STABILIZED)

Louisville: Demand good; trend easy; supply ample; bleachable fancy 7¾¢ lb.; white tallow 8¼¢ lb.; yellow grease 6½¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 8¾¢ lb.; yellow grease 7¾¢ lb.

Kansas City: Demand slow in feed trade, good from soapers; trend steady; supply adequate for demand; prime bleachable tallow 7¾¢ lb., tank car.

Chicago: Demand fair; supply short; bleachable fancy tallow, tank trucks or carlots 8¢ lb.; yellow grease 7¼¢ lb.

Ft. Worth: Demand fair; supply adequate; prime tallow, tank cars 7¾¢ lb.; drums 9¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

BARLEY FEED

Boston: Demand slow; supply adequate; $45.

Ogden: Supply average; rolled $48@53; whole barley $40@45.

Philadelphia: Demand slow; supply fair; pulverized $44.75.

Portland: Demand good; trend higher; supply ample; rolled $63, ground $61.

San Francisco: Demand fair; supply ample; rolled $60; ground $59.

Los Angeles: Demand fair; trend firmer; supply tighter; standard rolled $3.25 cwt.; standard ground $3.25 cwt.

Milwaukee: Demand good; supply fair; needles $1.08@1.14; ground screenings $25.

Chicago: Demand quiet; supply adequate; $35.

Baltimore: Demand quiet; supply adequate; $45.50.

Seattle: Demand good; trend firm; supply fair; $52, bulk, delivered truck lots.

BENTONITE (SODIUM)

Denver: Demand fair; trend good; supply ample; $21.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 30 granular $31.50; 300 mesh fine $31.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 50 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply good; $90@95, asked.

BLOOD MEAL

Portland: Demand slow; trend lower; supply ample; $105.

Ogden: Supply average; $100 in 100-lb. bags, f.o.b. Ogden.

Louisville: Demand fair; trend steady; supply ample; $90@95.

San Francisco: Demand good; supply tight; $7 a unit of ammonia.

Los Angeles: Demand fair; trend steady; supply adequate; $7.50 a unit of ammonia.

Chicago: Demand and supply fair; guaranteed 80% protein $127.50.

BONE MEAL (STEAMED)

Louisville: Demand slow; trend strong; supply light; $85@90.

Los Angeles: Demand and trend steady; supply adequate; imported $73.50 in 20-ton lots.

Denver: Demand good; trend strong; supply scarce; $75, f.o.b. Bay Shore, Cal.

Boston: Demand and supply steady; $90.

Portland: Demand slow; supply ample; trend unchanged; $95.

San Francisco: Demand good; supply ample; $75.

Cincinnati: Demand good; trend stronger; supply fair; $90.

Ft. Worth: Demand fair; supply light; $85, f.o.b. Ft. Worth, local manufacture.

Buffalo: Demand good; trend steady; supply ample; $90.

St. Paul: Steady trend; fair demand; good supply; $85, f.o.b. plant.

Seattle: Demand and trend steady; supply good; $85, ex-dock, truck lots.

Chicago: Demand and supply fair; $75 @90.

BREWERS DRIED GRAINS

Los Angeles: Demand and trend steady; supply adequate; $49 bulk, $53 sacked.

Milwaukee: Demand good; supply fair; $48.

Boston: Demand and supply steady; 26% $57.75; 22% $56.75.

Philadelphia: Demand dull; supply fair; trend unsettled; $59.50.

Louisville: Demand good; trend steady; supply ample; $51.

San Francisco: Demand fair; supply ample; $54.

Cincinnati: Demand poor; trend steady to higher; supply adequate; $54@54.40.

Ft. Worth: Demand fair; supply moderate; $54.40, November.

Chicago: Demand fair; supply adequate; 26% $48@48.50.

Buffalo: Demand and supply fair; trend steady to higher; $50.50, bulk, Boston.

BREWERS DRIED YEAST

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Omaha: 11c lb.

Portland: Demand steady; supply ample; trend unchanged; 8⅛¢ lb.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Boston: Demand and supply steady; 10¢ lb.

Louisville: Demand slow; trend steady; supply ample; 10@10½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ lb., l.c.l.

Buffalo: Demand good; trend steady; supply ample; $10.35 cwt.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Seattle: Demand slow; trend steady; supply ample; $13 cwt.

BUTTERMILK-CONDENSED

Philadelphia: Demand slow; supply light; $4.25 cwt.

Ogden: Supply normal; $4.40, 100-lb. drum.

Boston: Demand slow; supply light; 5½¢ lb.

Louisville: Demand dull; trend steady; supply normal; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Los Angeles: Demand and trend steady; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Wichita: Demand good; supply insufficient; $2.90 cwt. in barrels.

Chicago: Demand light; supply adequate; $3.25 cwt. in carlots.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.63, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Los Angeles: Demand and trend steady; supply ample; $10.25.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Boston: Demand and supply light; $100.

San Francisco: Demand steady; supply ample; $141.

Los Angeles: Demand fair; trend unchanged; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 ton in 50-lb. multiwalls.

COCONUT OIL MEAL

Los Angeles: Demand uncertain; trend very strong; supply very short; copra cake, spot, nominal market $80, bulk.

Portland: Demand good; trend higher; supply limited; $73.50.

San Francisco: Demand fair; supply ample; solvent $71, expeller $77.

COD LIVER OIL (FORTIFIED)

Boston: Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18⅛@20¢, 2,250 A 18½@21¢, 3,000 A 21⅛@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Los Angeles: Demand steady; trend firm; supply adequate; 5¢ lb.

Boston: Demand good; supply scarce; 5¢ lb., nominal.

New York: Demand and supply fair; trend steady; 4¾@5¢ lb., f.o.b. eastern shore.

Denver: Demand fair; trend steady; supply good; dried $187.40, f.o.b. Denver.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.80, meal $83.80.
Atlanta: Feed $55.98, meal $89.98.
Birmingham: Feed $54.64, meal $88.64.
Boston: Feed $54.84, meal $88.84.
Chicago: Feed $43, meal $77.
Cleveland: Feed $51.14, meal $85.14.
Denver: Feed $53.51, meal $87.51.
Ft. Worth: Feed $51.96, meal $85.96.
Indianapolis: Feed $48.36, meal $82.36.
Kansas City: Feed $43, meal $77.
Louisville: Feed $50.21, meal $84.21.
New Orleans: Feed $53.20, meal $87.20.
New York: Feed $54.43, meal $88.43.
Norfolk: Feed $53.71, meal $87.71.
Philadelphia: Feed $54.02, meal $88.02.
Pittsburgh: Feed $51.96, meal $85.96.
St. Louis: Feed $43, meal $77.

CORN OIL MEAL

Louisville: Demand slow; trend strong; supply normal; $52.45, up $2.

Cincinnati: Demand fair; trend steady; supply adequate; $49.

COTTONSEED OIL MEAL

Denver: Demand and supply good; trend strong; $65.

Portland: Demand good; trend higher; supply ample; $63.

Atlanta: Demand good; trend strong; supply limited; 41% $66, immediate.

Boston: Demand good; supply adequate; $75.

Louisville: Demand fair; trend very strong; supply ample; old process $68, up $5; new process $67, up $5.

Los Angeles: Demand steady; supply limited; trend stronger; nominal $52@53, bulk, for expeller; $59@59.50, bulk, for solvent.

Ogden: Supply average; 41% $63@68.

Philadelphia: Demand and supply fair; $50.75.

San Francisco: Demand good; supply ample; expeller $60.80; 41% solvent $62.20.

Omaha: Demand fair; supply ample; 41% solvent $61.80, bulk, delivered Omaha.

Wichita: Demand slow; supply ample; 41% old process $65.

Kansas City: Demand fair in this area, good further south; trend steady; supply tight for nearby and very little being offered further forward than December; old process meal $62, Memphis; solvent meal $66, Kansas City, coming from Texas.

Cincinnati: Demand poor; trend steady; supply adequate; old process $70@71.

Chicago: Demand and supply fair; hydraulic $63.50; solvent $62@62.50, basis Memphis.

Buffalo: Demand and supply fair; trend higher; $79, Boston.

Ft. Worth: Demand excellent for meal, slow for hulls; limited offerings; carlots, 41% old process $60; solvent $59@60.75; pellets $2 additional; cottonseed hulls $18.

Memphis: Demand light; trend lower; supply plentiful; prime 41% protein, old process $62; new process, 41% solvent $61.

Seattle: Demand good; trend steady; supply fair; $69, delivered, truck lots, 41% expeller process.

St. Louis: Demand fair; trend higher; supply limited; solvent $67.50.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 18¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Portland: Demand good; supply ample; trend unchanged; $115.

Denver: Demand good; trend firm; supply ample; $96.

Cincinnati: 18½% phosphorus $92@93.

DISTILLERS DRIED GRAINS

San Francisco: Demand fair; supply ample; solubles $85.

Philadelphia: Demand slow; supply light; trend unsettled; $65.

Boston: Demand fair; supply tight; light $62, dark $63.

Louisville: Demand good; trend steady; supply ample; distillers prices here for November, bourbon grains: light $53, dark $54, solubles $77.

Cincinnati: Demand poor; trend steady; supply adequate; $55@56.

Buffalo: Demand fair; trend lower; supply good; $55, bulk, Boston.

Seattle: Demand good; trend firm; supply ample; $67, delivered, truck lots.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $42.40.

Ogden: Supply normal; $38@42.

Atlanta: Demand slow; trend steady; supply ample; $63.10, immediate.

Portland: Demand good; supply ample; trend unchanged; $50.

Los Angeles: Demand steady; trend firm; supply adequate; molasses $46.90@47.70.

Milwaukee: Demand good; supply fair; molasses $50; plain $50.

Boston: Demand fair; supply ample; $56.

Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, November-December, plain or molasses $53.33, delivered Ft. Worth.

Buffalo: Demand and supply fair; trend steady; $56.50, Boston.

Seattle: Demand slow; trend steady; supply good; $45, carlots.

DRIED BUTTERMILK

San Francisco: Demand fair; supply ample; 11¢ lb.

Los Angeles: Demand and trend steady; supply adequate; 11¾¢ lb.

Louisville: Demand slow; trend steady; supply ample; 11@11½¢ lb.

Ogden: Supply average; $7.25, 100-lb. bag.
Milwaukee: Demand and supply fair; $10 cwt.
Buffalo: Demand good; trend firm; supply limited; $11.35 cwt.
Chicago: Demand fair; none available; medium acid, nominally $11; sweet cream, nominally $11.25 cwt. in carlots.

DRIED CITRUS PULP

Los Angeles: Demand and trend steady; supply limited; orange pulp $41, bulk; lemon pulp $39, bulk.
Boston: Demand slow; supply light; $49.50, f.o.b. shipping point.
Atlanta: Demand good; trend steady; supply limited; $56.50, immediate; meal $51.50.
San Francisco: Demand good; supply fair; meal $54.
Buffalo: Demand and supply poor; too scarce to quote.

DRIED SKIM MILK

Portland: Demand good; supply ample; trend unchanged; 13¢ cwt.
Ogden: Supply normal; $15.15, 100-lb. drum; $9.70 50-lb. bag.
Philadelphia: Demand slow; supply light; $12.50 cwt.
Boston: Demand good; supply short; 12¢ lb.
Louisville: Demand slow; trend steady; supply ample; 11½@12¢ lb.
San Francisco: Demand and supply fair; 13½¢ lb.
Los Angeles: Demand and trend steady; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
Cincinnati: Demand fair; trend steady; supply adequate; 10½¢ lb.
Milwaukee: Demand and supply fair; $11 cwt.
Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.
Chicago: Demand good; supply light; $10.60@10.75 cwt. in carlots.
Minneapolis: Strong trend; moderate demand; tight supply; 11½@12¢ lb.

DRIED WHEY

San Francisco: Demand steady; supply good; $5.50 cwt.
Portland: Demand good; supply ample; trend unchanged; $7 cwt.
Boston: Demand steady; supply plentiful; 5½¢ lb., f.o.b. plant.
Louisville: Demand fair; trend steady; supply normal; 6@6½¢ lb.
Los Angeles: Demand and trend steady; supply adequate; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.
Ogden: Supply average; $6.90, 100-lb. bag.
Philadelphia: Demand slow; supply light; $6.25 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.
Kansas City: Demand fair; trend steady; supply lighter; $5.50 cwt. producers' plants for regular or partially delactosed.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6 November, $6.25 November, ton lots, f.o.b. warehouse, Ft. Worth.
Chicago: Demand fair; supply adequate; $5.50, f.o.b. plant.

FEATHER MEAL (HYDROLYZED)

Atlanta: Demand fair; trend steady; supply ample; $93, immediate, f.o.b. Alabama and Georgia producing points.
Boston: Demand and supply steady; $85, f.o.b. shipping point.
Los Angeles: Demand steady; trend unchanged; supply ample; $1.25 a unit of protein.
Ft. Worth: Demand good; supply moderate; 85% to 87% protein $90@93, f.o.b. trucks, north Texas plant.

THE BIG DIFFERENCE
between "ground corn cobs" and PAXCO DEHYDRATED CORN COB MEAL is found in PAXCO's dehydration, uniform high quality, elimination of spoilage worries, constant supply, and year 'round stabilized prices on reservation. Write today to
PAXTON PROCESSING CO., INC.
P. O. Box 120 Paxton, Illinois Phone 222

FISH MEAL

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $151@153.
Atlanta: Demand good; trend strong; supply limited; 60% $170, immediate, nominal.
Portland: Demand good; trend higher; supply limited; $2.35 a unit, f.o.b. Vancouver, B.C.
Boston: Demand very active; supply nil; withdrawn because of scarcity of supply.
Louisville: Demand dull; trend steady; supply normal; $165.
San Francisco: Demand fair; supply ample; Peruvian fish meal $2.25 a unit of protein.
Los Angeles: Demand good; trend steady; light offerings; local production, 60% protein $2.25@2.30 a unit.
Milwaukee: Demand good; supply fair; 60% $58.50.
Denver: Demand good; trend strong; supply scarce; $2.25 a unit of protein, f.o.b. West Coast.
Cincinnati: Demand fair; trend steady; supply adequate; $164.
Minneapolis: Steady trend; very light supplies of 70% herring; good on 58 to 60%; fair demand; 58 to 60% $165, truck lots; 70% herring $2.30 a unit, West Coast, nominal.
Buffalo: Demand terrific; trend higher; supply nil; 60% protein menhaden $180, bulk, nominal; $185, sacked, nominal.
Ft. Worth: Demand good; supply limited; sardine $165.50, delivered Texas points from California.
Chicago: Demand good; supply very tight; eastern menhaden fish meal, 60% protein, no offerings; Gulf, no offerings; western blended, 60% protein $2.25 a unit of protein; delivered Midwest points $170; Northwest herring-salmon blend $138; Canadian herring, 73% protein $2.25@2.30 a unit of protein subject to production.
Seattle: Demand good; trend easy; supply limited; $2.43 a unit protein, delivered truck lots (Canadian production)

HAY

Ogden: Supply normal; $1 bale; $15 in the field; $18 in the barn.
Philadelphia: Demand slow; supply fair; $32@35.
Portland: Demand good; trend firm; supply limited; $30@32.
Boston: Demand and supply steady; No. 2 timothy $40@42.
Louisville: Demand dull; trend weak; supply good; straw, any variety $25 or more; hay, any variety, No. 1 $25, No. 2 $23.
Los Angeles: Fair interest for better quality; ample supplies all grades; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@31; U.S. No. 2 green $27@29; U.S. No. 2 $24@26.
Wichita: Demand poor; supply ample; prairie $8@10, alfalfa $10@12.
Denver: Demand slow; trend slow; supply ample; alfalfa, baled $25, first and second cutting, delivered in Denver.
Cincinnati: Demand fair; trend steady; supply adequate; by truck—No. 1 timothy $24; No. 1 second cutting green alfalfa $31, mixed $27.
Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

HOMINY FEED

Boston: Demand fair; supply ample; $54.
Louisville: Demand slow; trend easy; supply normal; $45 due to new corn crop.
Milwaukee: Demand good; supply fair; $42.50, sacked, Milwaukee, limited amount for November, nothing for December.
Cincinnati: Demand poor; trend steady; supply adequate; $46@47.
Kansas City: Demand good; trend steady; supply tight for nearby; yellow $36@36.50, bulk, $3.50 more for sacks; white $1 less.
Buffalo: Demand and supply fair; trend steady; $49, bulk, Boston.
Memphis: Demand nil; trend steady; supply ample; white $47, yellow $47.
Chicago: Demand fair; supply adequate; $43.50.
Seattle: Demand fair; trend firmer; supply good; $53, delivered, sacked, carlots.
St. Louis: Demand slow; trend steady; supply limited; $45.

LINSEED OIL MEAL

Philadelphia: Demand and supply fair; trend unsettled; 34% $77.50.
Portland: Demand good; supply ample; trend unchanged; $75.
Boston: Demand good; supply limited; 34% $79.
Louisville: Demand fair; trend strong; supply good, especially new process; old process $77.40, advance of $1; new process $74.40, advance of $4.50.
San Francisco: Demand fair; supply ample; $71.
Los Angeles: Local production, 29% protein, no offerings.
Omaha: Demand excellent; supply tight; 34% solvent $63.50, bulk; 32% old process $65.80, bulk, Omaha basis.
Milwaukee: Demand good; supply fair; old process $71.50, new process $68, nominal.
Wichita: Demand slow; supply ample; 34% $74.50.
Denver: Supplies withdrawn from market.
Cincinnati: Demand poor; trend steady to higher; supply adequate; new process $72.
Kansas City: Demand good; trend steady; supply tight for nearby; solvent meal $57@57.50, bulk, Minneapolis; old process $61.
Chicago: Demand good; supply scarce; solvent, nominally $63; expeller $64.50, basis Minneapolis.
Minneapolis: Good demand and short supplies brought sharp $5 increase; solvent $58.50, bulk; expeller $61.50; nearby material just about unobtainable.
Ft. Worth: Demand good; offerings light, especially nearby shipment; carlots, 34% solvent: November-December $79.60@80, truck $78.50; pellets $2.50 premium.
Seattle: Demand fair; trend firm; supply limited; $80, delivered carloads, 34% protein.

MALT SPROUTS

Boston: Demand and supply limited; $42.50.
Milwaukee: Demand good; supply fair; odd weights $41, even weights $43.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $48.
Chicago: Demand fair; supply adequate; No. 1 $43.

MEAT AND BONE MEAL

Cincinnati: Demand good; trend stronger; supply short; 50% meat and bone scraps $89.50, Cincinnati.
Denver: Demand normal; trend steady; supply ample; 50% $80, bags, f.o.b. Denver truck lots.
Chicago: Demand fair; supply adequate; 50% protein $87.50.
St. Paul: Price slightly lower; good demand early in week; ample supplies; 50% meat and bone meal $85@90.
Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $90 bulk, $95 sacked.
Ogden: Supply normal; $92.50 in 100-lb. bags.
Portland: Demand slow; trend lower; supply ample; $1.75 a unit.
Wichita: Demand fair; supply sufficient; 50% $95, f.o.b. plant; 55%, no quotations, no offerings.
Louisville: Demand fair; trend easy; supply ample; $90@95.
Boston: Demand slow; supply ample; $1.35 protein unit; converted 50% $80.
Omaha: Demand slow; supply ample; $90, Omaha basis.
Kansas City: Demand fair; trend steady to stronger; supply adequate; 50% meat and bone scraps $87.50@90.
San Francisco: Demand good; supply fair; $1.75 a unit of protein.
Los Angeles: Demand slow; trend easier and weak; supply ample; 50% protein $1.90 a unit.
New York: Demand poor; trend lower; supply tight; 50% $72.50, 55% $85, bulk; 50% $75.50, 55% $88 sacked.
Ft. Worth: Demand slow; supply sufficient; meat and bone, 50% $85@90, f.o.b. or delivered Ft. Worth.
Seattle: Demand fair; trend weak; supply good; $90, ex-warehouse, 50% protein.
St. Louis: Demand good; trend higher; supply adequate; $98.

MILLFEED

Minneapolis: Very good demand and extremely tight supplies; sacked bran and middlings moved up in sympathy with sharp demand for bulk; bran $39@40, middlings $40.50@42, red dog $44@46.
Kansas City: Demand good, though it has slacked off as prices worker higher; trend steady; supply tight; bran $34.50@35.25, shorts $38@38.75, sacked; bran $32@32.75, shorts $38@38.75, middlings $37.50@38.25, bulk.
Wichita: Demand active; supply adequate; basis Kansas City: bran $34.50@35.25, shorts $38.25@38.75; bran advanced $1.50 and shorts $2.50, compared with the preceding week.
Omaha: Demand excellent; supply ample; sacked bran $36; sacked gray shorts $42; bulk standard midds. $38.50.
Ft. Worth: Demand fair; supply light for nearby delivery; carlots, burlaps, prompt, bran $43, gray shorts $47, delivered Texas common points; 50¢ higher on bran and $2 higher on shorts compared with previous week.
Chicago: Millfeeds continued firm in the central states during the week ending Nov. 12. Offerings for nearby shipment were scarce and demand for supplies for the week of Nov. 24 shipment was excellent. Standard midds., especially, were wanted. Quotations: bran $43.50@44, standard midds. $44.50@45.50, flour midds. $46@47, red dog $48@49.
Cincinnati: Demand fair; trend steady to higher; supply adequate; bran $45@49; middlings $49.
St. Louis: Demand good; trend steady; supply short; bran $40@40.50, shorts $44.50@45, sacked; bran $37@37.50, shorts $43@43.50, middlings $42.50@43, bulk.
Boston: Demand good; supply spotty; bran $52, middlings $53.
Buffalo: There was a "wild" market in millfeeds this week. Bran has shot up $7 since Nov. 5 and middlings have skyrocketed $7.50. Supplies are almost unbelievably thin. A one-car sale drives the market into firmer ground. There has been some resistance—also some sales. Consumers had overstayed the market. Each new order added to the market's firmness. Millfeed prices are somewhat askew compared with some other ingredients. Both bran and middlings ended the week $4 higher. Red dog held unchanged. Quotations Nov. 12: bran $47@48.50, middlings $49@50.50.

For DEHYDRATED ALFALFA—
"MERRY MIXER" GREENULES

BETTER DISPERSION!
DUST-FREE! FREER FLOWING!
MORE UNIFORM!
CONSOLIDATED BLENDERS INC.
Fremont, Nebr. • Phone Park 1-7000

FROM ICELAND
COD-LIVER-OIL
FROM ICELAND
VITAMIN-A-STABILIZED
MIDLAND WESTERN, INC.
160 W. SPRUCE ST., READING, PA.

FEED GRAINS
KAFIR-MILO
BARLEY - CORN - OATS - WHEAT
From Every Grain Producing Area in United States
CONTINENTAL GRAIN COMPANY

OFFICES:
New York, Chicago, Kansas City, St. Louis, Omaha, Columbus, Memphis, Norfolk, Nashville, Enid, Minneapolis, Louisville, Fort Worth, Buffalo, Toledo, Houston, Galveston, Portland, San Francisco, Vancouver, B.C., Winnipeg, Los Angeles

TERMINAL ELEVATORS:
Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

red dog $49@52.50. The bulk differential on both bran and middlings was $5.50.

Philadelphia: Demand and supply fair; trend unsettled; bran $61; standard midds. $52; red dog $60.

New York: Demand and supply good; trend stronger; bran $52.50@53, standard midds. $55@55.50.

Louisville: Demand good; trend strong; supply ample; bran $45.25, up 50¢; mixed feed $48.25, up $1.15; shorts $51.10, up 75¢; middlings $50.50, up $4.

Memphis: Demand good; trend higher; supply scarce; wheat bran $42.50, gray shorts $46.30, standard midds. $45.80.

Denver: Demand good; trend firm; supply limited; shorts $41.75; bran $38; mill run $40.

Seattle: Demand fair; trend steady; supply ample; $38, delivered common transit points, carlots.

Portland: Demand fair; trend firm; supply ample; $37; middlings $45.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $37, middlings $42; to Denver: red bran and mill run $44, middlings $49; to California: red bran and mill run $44.50, middlings $49.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $43.50@44, steady demand, firmer tone, adequate offerings; red bran $49@50, bulk, slow demand, firmer tone, ample offerings.

San Francisco: Demand fair; supply ample; millfeed $45.50; red bran $50.50.

MINERAL FEED

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Ogden: Supply normal; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Denver: Demand fair; trend steady; supply ample; $155.

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3¼% granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

MOLASSES

Los Angeles: Demand and trend steady; supply adequate; $25 bulk, f.o.b. tank cars; $25.25, bulk, f.o.b. tank trucks.

Denver: Demand fair; trend steady; supply good; 13¼¢ gal., New Orleans.

Cincinnati: Demand fair; trend steady; supply adequate; 13½¢ gal., New Orleans.

Boston: Demand good; supply adequate; 17½¢ gal. in tank cars.

Kansas City: Demand slow to fair; trend steady; supply adequate; 13@13¼¢ gal., tank car, New Orleans.

Louisville: Demand slow; trend easy; supply normal; 13¾¢ gal., tank car price, f.o.b. Gulf ports.

Atlanta: Demand good; trend steady; supply limited; citrus $22.50, bulk, f.o.b. Florida producing points, immediate.

San Francisco: Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

New York: Demand and supply good; trend steady; blackstrap 17¢ gal., tank cars, tank wagons, f.o.b. New York.

Memphis: Demand improved; supply ample; trend steady; blackstrap 13¼¢ gal., tank car, f.o.b. New Orleans; $29.50 ton, delivered Memphis, truck.

Minneapolis: Weak trend; demand fair at best; ample supplies; 13@13¼¢ gal., New Orleans; $34 ton, f.o.b. terminal.

Buffalo: Demand fair; trend steady; supply good; 17¼¢ gal., f.o.b. Buffalo.

Ft. Worth: Demand fair; supply sufficient; blackstrap 14¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $31.65, seller's market price on date of shipment.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Louisville: Demand fair; trend slightly stronger; supply ample; reground $22.30, rolled $84.30, feeding $78.30, pulverized $50.80, crimped $65.30.

Los Angeles: Demand fair; trend firmer; supply adequate; pulverized, local production $62, bulk.

Philadelphia: Demand dull; supply fair; pulverized white $52; Canadian oat feed $26; domestic oat feed $24.

Boston: Demand fair; supply good; white pulverized $55; reground oat feed $17.25.

Portland: Demand improved; trend higher; supply ample; rolled $62, ground $59, cleaned $61.

Cincinnati: Demand poor; trend steady; supply adequate; reground oats $20.50; pulverized white oats $49; rolled oats $83@86.

Chicago: Demand fair; supply adequate; reground oat feed $14@14.50; fine ground feeding oatmeal $70@72; feeding rolled oats $80@82.

Minneapolis: Fairly slow demand; ample supplies; no change in prices; feeding rolled oats $78; feeding oatmeal $69; pulverized $44.50; crimped $53; reground $15.

Memphis: Demand fair; trend higher; supply scarce; 3½% protein, reground oat feed $20.75.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $43.50; reground oat millfeed, 3% protein, sacked $22.

OYSTER SHELL

Boston: Demand and supply steady; $25 in paper.

Louisville: Demand good; trend steady; supply ample; in 25-lb. paper $25.55; in 50-lb. paper $23.10; in 80-lb. paper $22.85.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Los Angeles: Demand and trend steady; supply ample; $14.80.

Portland: Demand good; supply ample; trend unchanged; western $34, eastern $38.50, granite grits $26, shell flour $24.

Cincinnati: Demand fair; trend steady; supply adequate; $23.45.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $42.

Atlanta: Demand fair; trend strong; supply limited; 45% $67, immediate.

PEAT MOSS

Chicago: Demand fair; supply short; $3.60@3.70, standard 7½ cu. ft. bale.

San Francisco: Demand fair; supply ample; $3.75 bale.

Philadelphia: Demand slow; supply light; $2.85 bale, f.o.b. pier.

Portland: Demand slow; supply ample; trend unchanged; $3.25 bale.

Boston: Demand and supply steady; $3.15 bale.

Los Angeles: Demand fair; trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.85.

Seattle: Demand poor; trend easy; supply good; $2.70 bale, delivered, truck lots.

POTASSIUM IODIDE, U.S.P.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply moderate; 55% protein $100@103, f.o.b. north Texas plants.

Boston: Demand fair; supply spotty; $97@100.

Los Angeles: Demand fair; trend steady; supply ample; $1.80 a unit of protein.

Atlanta: Demand fair; trend steady; supply ample; $95, immediate, f.o.b. Alabama and Georgia producing points.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good for export, slow for domestic at present price; none offered; carlots, rice bran $37@38, nominal, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Atlanta: Demand fair; trend steady; supply limited; bran $47, immediate, nominal.

San Francisco: Demand fair; supply ample; bran $40; polished $49.

Los Angeles: Demand better; trend firm; supply tight; bran, California production, high fat content $48.

SCREENINGS

Chicago: Demand fair; supply adequate; ground grain screenings $30.50; Canadian $23.

Buffalo: Demand and supply good; trend steady; ground $31.50, New York, lake and rail; unground, bulk $25.25, New York.

Minneapolis: Strong undertone developed late in week as supplies continued short; slight price increase; lights $5@14, mediums $15@25, heavies $26@35; Canadian, bulk $18; Canadian ground $27; flaxseed screenings $36; oil type flaxseed screenings $40, basis 15%.

Ft. Worth: Demand almost nil; supply sufficient; ground $28, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; malt house $19.50; barley $22.50@23.50.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand good; offerings increasing; carlots, bulk, No. 2 yellow milo $2.20@2.22, delivered Texas common points.

Los Angeles: Demand steady; trend firmer; supply ample; milo $2.33½ cwt., bulk.

SOYBEAN OIL MEAL

Portland: Demand good; trend higher; supply ample; $43.

Boston: Demand active; supply adequate; 44% $52, 50% $59.50, both f.o.b. Decatur in bulk.

Louisville: Demand fair; trend not strong; supply normal; $66, up $5.80.

Omaha: Demand good; supply ample; 44% $57.90, bulk, Omaha basis.

Ft. Worth: Demand good in nearby positions; supply sufficient; carlots, 44%, $74.50 November, $75.50 December, $76.50 January-March coupled; 50% protein: $81 November, $82.50 December, $83 January-March coupled, $84 January-June; truck meal 44% $68.50 this week.

Wichita: Demand good; supply adequate; 44% $65, 50% $73, f.o.b. Wichita.

Memphis: Demand fair; trend lower; supply limited; prime 44% solvent $64, f.o.b. Memphis.

Minneapolis: Good demand and rising linseed and millfeed prices brought $3 increase; good supply; 44% $46.50, bulk, Decatur; 50% $67.50, bulk, delivered, Minneapolis.

Chicago: The soybean oil meal market was extremely strong in the central states during the week ending Nov. 12, and prices advanced $4@6 ton. Demand was good and shipping schedules of processors were full. A good trade in supplies for December was reported at $2@3 below the current market. A number of factors seemed to contribute to the run-up of the market. First, it was thought that some feed manufacturers had let their inventories get low with the expectation that the big bean harvest would bring lower prices. However, they are being forced to cover in some cases despite higher prices. Improved exports and a bullish sentiment following the recent elections are said to have turned the market upward. Quotations: 44% protein soybean meal, bulk, unrestricted, basis Decatur $57@57.50; eastern restricted $55.50@56.50; 50% bulk, unrestricted, basis Decatur $61@62; eastern restricted $59.50@62.

Cincinnati: Demand poor; trend higher; supply adequate; $55, bulk, Decatur.

Los Angeles: Demand improved; trend strong; smaller offerings; $77.50@78, bulk.

Ogden: Supply average; $81@86.

Philadelphia: Demand and supply fair; trend unsettled; 44% $54.50, bulk, Decatur.

Atlanta: Demand good; trend strong; supply ample; 44% $67, immediate.

San Francisco: Demand fair; supply ample; $77.50.

Milwaukee: Demand good; supply fair; $55, bulk, Decatur.

Kansas City: Demand fair to improving; trend steady to stronger; supply adequate for western meal, tight for nearby unrestricted; Kansas City and western bound meal $49@51, bulk, Decatur; unrestricted $56@56.50.

Denver: Demand good; supply ample; trend up; $71.50.

Seattle: Demand steady; trend firmer; supply ample; $78, carlots.

St. Louis: Demand fair; trend higher; supply limited; 44% $67.

TANKAGE

Omaha: Demand slow; supply ample; $87.50.

Louisville: Demand fair; trend easy; supply good; $95@100.

Wichita: Demand fair; supply sufficient; 60% $97.50, f.o.b. plant.

Ft. Worth: Demand slow; supply light; 60% digester $90@92, f.o.b. Ft. Worth.

Cincinnati: Demand good; trend strong; supply scarce; 60% digester $97.50.

Chicago: Demand and supply fair; 60% protein $87.50@97.50.

St. Paul: Fair to good demand for ample supplies; price slightly weaker; 60% digester $87@90.

Kansas City: Demand good with much apparently going into hog feeds, buying more liberal now since prices went down and are started back up; trend stronger; supply tight; 60% digester $95@97.50.

St. Louis: Demand good; trend higher; supply adequate; $103.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 7¾¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend lower; commercial grade $75, f.o.b. Buffalo.

Chicago: Fairly good demand; adequate supply; $97.

Wirthmore Operations Elect Officers, Director

WALTHAM, MASS. — John Watts was elected president of Wirthmore Mills, Inc., of Hickory, N.C., at a recent Wirthmore Feeds board of directors meeting. Billy Edwards was reelected treasurer.

In other Wirthmore business, Charles Landry, treasurer and general manager of the firm's Crosby Milling Co., was elected a director of that firm.

MIDWEST

(Continued from page 1)

to grow as the industry seeks to put its product and its service closer to the feeder.

● More and more feed men realize that, to keep up with the competitive pace, they must be prepared to use and adapt new methods and new facilities in production and handling.

Two Events

The production school this year was actually two events. There was the main three-day production school, dealing primarily with bulk handling of finished feeds for two days and then other phases of mill operations on the third day. Also, there was a small mill short course, designed for custom mixers and other operators of small mills.

Forty-four experts from feed and allied firms joined to form the faculty for the concentrated three-day program, and more than 50 equipment firms participated in the program through demonstrations of facilities and systems under discussion at the school. Equipment which was set up, and in many cases operating, filled the American Royal arena to provide live examples of bulk handling systems and small mill operations. Close to $500,000 worth of machinery was set up.

Reviews of the talks and discussions at the school will appear in a subsequent issue of Feedstuffs.

Research Report

In addition to the talks and discussions, the bulk handling sessions included a report on a research project which was conducted in connection with the 1958 school. The study, dealing with certain basic bulk handling systems in operation in nine mills, brought out, as did the school program, that there are many different methods and installations available for establishing bulk systems.

In fact, no two of the systems under study were exactly the same. Similarly, capital investments varied greatly.

"The study," the report said, "shows that small mills as well as the large manufacturers are successfully handling finished feeds in bulk. However, it also shows that handling feed in bulk tends to increase difficulties and does have limitations. Considerable study and work on the part of feed plant operators are required."

Following up this year's theme of bulk handling in the research and program, it already has been announced that the main subject in 1959 will be pelleting. And, said the 1958 chairman, J. D. Johnson of General Mills, Inc., Minneapolis, a five-year projected research program is being developed as the sponsoring group looks ahead at industry needs in the way of production research.

Broadened Interest

Throughout the school, the broadened interest in the new developments in production and handling was apparent. This interest, it was brought out, holds for management as well as production people. Among those present was D. H. McVey, head of the feed division of General Mills, and the "boss" of this year's production school committee chairman, Mr. Johnson. Mr. McVey, in a brief talk, praised the students who turned out for the school, pointing out that it is vitally important today to keep on top of new developments. He also paid tribute to the Midwest association and the committee and the machinery firms participating, noting that they were serving the industry as well as themselves.

Use Feedstuffs WANT ADS for RESULTS

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Feed Ingredients of All Kinds
FORMULA MIXING FOR DEALERS
Excellent References

COB ABSORBENT FEED BASE
HARD WOODY RING PARTICLES REMOVED
Mixed With Molasses for Livestock Feed Will Absorb More Than 5 Times Own Weight
Bagged in 4-Ply Sewed Paper Bags
TI-CO INDUSTRIES, INC.
TIPTON, INDIANA — ELWOOD, INDIANA
P. O. BOX 185 — FEDERAL 2-5942

CORNELL

(Continued from page 1)

lation growth plus its ability to scatter faster because of the modern transportation and communication system, and the increasing use of capital to direct the flow of business.

"More and more the line between country and city is disappearing. The interdependence is almost complete," the speaker continued. "The factors which we deal with as businessmen in the country are pretty much the same as in the city. The fast population rise has brought about tremendous changes which are going on day by day. People who do not accept the necessity for changes and move with them often find themselves swamped, so to speak."

Opportunities for Capital

As production units of all kinds are getting larger and larger, capital is given a greater opportunity to move in and direct the flow of business, he said, citing the broiler industry as a striking example of this development.

"I expect this trend in expanded use of capital to continue," Mr. McConnell said. "It will bring changes all along the line—changes which we might as well accept and prepare to accommodate ourselves to. I hope it doesn't contribute to loss of freedom, over-industrialization of farmers and burdensome regulation of industry."

Mr. McConnell described the "bastions of a free society" and raised the question as to whether or not they are being maintained. "We must appreciate that there are great and real dangers of being subjected to controls by the state," he said.

"And unfortunately, if we are not careful, we will find ourselves being ruled, not by a government for all the people, but by government-by-special-interests, such as labor or other interests that can command the votes."

Excessively high taxation, labor monopoly and restrictions on free markets are in opposition to the bastions of freedom, Mr. McConnell said. The basis for higher taxation is being laid. There is no indication that a strong labor monopoly will be seriously challenged in the near future, he declared, and already there is a great deal of negation of the free market in farm commodities because of the farm program.

Tomorrow's Business Climate

Mr. McConnell made this appraisal of the factors which are shaping the business climate for the foreseeable future:

The cold war: If a "hot war" can be avoided, it can only be done if we maintain a government with great courage and a strong hand. This is one of the almost overwhelming factors which is shaping the business climate, moving it toward the left.

The federal farm program: It will continue and will have the effect of moving us over-all toward increasing involvement of the state in the affairs of farm producers and agricultural business.

Labor Unions: In collective bargaining, legislation and politics, labor unions are the most powerful force in our economy today. Without some effective check, they will move much too far, but they are shaping the political atmosphere increasingly.

Voting population: The voting population has become much more unstable, with the independent vote becoming more and more important in determining elections.

"I think we are headed towards more socialism, that is, toward more government ownership, plus more government control in the field of business policies," Mr. McConnell said. "The field in which management can move freely will be continually narrowed. Personally, I don't think this is good, but I believe it's going to happen."

Business management has a responsibility for the kind of government the U.S. will have in the next decade, he concluded. "I call to mind the precept of a successful businessman, the father of one of my good friends. The sense of it is, when you work for your own business for three days, prepare to spend two days, if necessary, to maintain the kind of government that permits you to operate a legitimate business," he said.

DR. L. C. NORRIS HONORED

BUFFALO, N.Y.—The "father of the Cornell Nutrition Conference" was honored by many of his former students and others attending the annual conference at Hotel Statler Nov. 13 in Buffalo. Dr. L. C. Norris, Cornell poultry husbandry department, who will retire next spring, received special recognition during the after-dinner program at the conclusion of the first day of the conference. His many accomplishments as a researcher, particularly in the field of mineral nutrition and unidentified growth factors, and as a teacher of many of today's leading poultry scientists, were cited by three former students. Speakers were Dr. H. S. Wilgus, Ray Ewing Co.; Dr. S. J. Slinger, Ontario Agricultural College, and Dr. I. Robertson, John W. Eshelman & Sons, Lancaster, Pa. Also on the program was a showing of the American Feed Manufacturers Assn. film, "Feed to Food." W. T. Diamond, AFMA secretary-treasurer, presented the film.

Nutrition Council

"The Nutrition Council represents a tremendous assembly of feed nutritional know-how and research facilities," Dr. Robertson said. "More than half its members have earned their Ph.D. degrees in biological science, and many members have served on staffs of agricultural colleges and experiment stations."

Regardless of training, he continued, each applicant for council membership must have at least one year of feed experience, with proportionately more experience in lieu of advanced academic training.

The council was established in 1941 with 9 members. It has since grown to include 86 members representing 74 feed manufacturers, 12 allied industry associations and 3 life members. Council membership is limited to one representative from an organization, and is dependent upon the mutual qualifications of the company's research facilities and the technical training and experience of the individual.

"The purpose of the Nutrition Council is to upgrade manufactured feed through widespread application of research," Dr. Robertson said. "This is accomplished in part through semi-annual meetings of the council, by discussion of mutual problems, by close contact and better understanding between feed scientists and academic workers, and the increasing amount of feed industry research.

"The council serves the feed industry as an industry service club, embodying the enthusiasm for action of a civic group, the scientific awareness on nutrition and health of a medical association and a concern for industry ethics of a ministerial association."

Survey of Members

Dr. Robertson reported the results of a survey conducted last summer in which responses were received from all members. It revealed that the average council member attended 2 colleges, earned 2¼ degrees, spent 6¼ years in teaching, research or extension and has had 14½ years of feed industry experience.

Each year the average member uses 52,577 farm animals and poultry in conducting 152 feeding tests, an average of about 3 each week. He has the assistance of 19 other technically-trained individuals engaged in biological research, quality control and feed formulation.

Functioning of the council through several committees was described by Dr. Robertson. These include the executive, education, quality control, ingredient, research, management survey, nutrition application, veterinary relations and program.

The education committee, he pointed out, has done much to stimulate nutrition conferences in several states and helped increase the fanout of nutritional information. The quality control committee, in cooperation with a committee of purchasing agents, has helped develop a number of purchasing guides.

A function of the management survey committee has been development and distribution of several sets of livestock and poultry management recommendations based on careful study and judgment of as many as 200 authoritative sources.

Assistance in developing regulations on uniform labeling of feed in cooperation with feed control officials and the Food & Drug Administration has been provided by the nutrition application committee, Dr. Robertson said.

One-Day School for Poultrymen Scheduled

NEW BRUNSWICK, N. J. — One day of school for poultry servicemen in feed and allied industries will be held in Agora Hall, Rutgers University, Nov. 21.

Sponsored by the poultry science department at Rutgers, the school has a program based on the theme "Service to the Poultry Industry."

Most of the morning session will be devoted to a panel discussion of the subject, 'What Are and What Should Be the Duties of a Serviceman?" Speakers include Robert E. Miller, general sales manager, Beacon Milling Co., Cayuga, N.Y.; Harry Rothman, associate agricultural agent, Cumberland County, New Jersey, and Dr. Paul D. Sturkie, professor of poultry physiology at Rutgers.

Also scheduled for the morning session is a discussion of the research programs in the department of poultry science at Rutgers.

The afternoon session will include demonstrations in the new poultry research annex. Persons attending the school will get a view of the research work being conducted and the type of equipment used in nutrition, pathology and physiology.

Also scheduled for the afternoon is a look at the poultry research farm where visits are planned to the solar laying house, the New Jersey Random Sample Test and the poultry farm research laboratory.

Poultry Promotion Referendum Fails

SACRAMENTO, CAL.—A referendum to determine whether producers of chickens and chicken eggs favor the institution of a promotional program under the California Poultry Promotion Council Law has been completed, announced the California Department of Agriculture.

The referendum failed to carry because affirmative votes were not sufficient to meet requirements established by the law. Affirmative ballots received were 22.98% of the total official list of poultry producers in California. To carry, the law requires that affirmative votes must be not less than 51% of the total list of producers.

Of the total number of producers casting ballots, 65.73% voted in favor of instituting a program and 34.27% voted against adopting a program. Both affirmative and negative votes combined represented 34.95% of the total list of producers.

Poultry Group Opposes All Efforts by Labor To Organize Farmers

ATLANTIC CITY, N. J.—The U.S. Poultry and Egg Producers Assn. went on record as being "unalterably opposed to any efforts by labor organizations to organize farmers and producers."

This was one of the resolutions adopted at the group's first annual convention held here recently.

The association then urged farmers to use their own existing organizations and agencies to gain bargaining power and obtain recognition in the marketing field.

Other adopted resolutions called for expansion of foreign markets as an outlet for poultry and eggs, investigation of the egg's future market, new methods of determining the price of poultry and eggs, a low cost crop insurance program to cover poultry producers and investigations of marketing agreements and acts used by other commodities to see if they might be applied to poultry and eggs.

Robert W. Scott, Haw River, N.C., was reelected president. Other officers elected were: Dr. Irving Berger, Lakewood, N.J., first vice president; Dunbar Carpenter, Medford, Ore., second vice president, and Bruce Eaker, Woodsdale, N.C., secretary-treasurer.

Alfalfa Processors Set Toledo Meeting

TOLEDO — Pelleting will be discussed at a meeting of the Alfalfa Processors Assn. to be held in the Copper Lounge Room of the Secor Hotel here Nov. 20.

The evening's program calls for a cocktail hour at 6:15 p.m., dinner at 7 p.m. and the program at 8:15 p.m.

Dr. T. W. Perry, animal husbandry department, Purdue University, will talk on "Pelleted Cattle Rations," and Ralph Mabey, Bremco Alfalfa Mills, will discuss "Custom Pelleting Corn and Sorghum Rations."

Also on the program is Joseph Chrisman, executive vice president, Alfalfa Dehydrators Assn., Kansas City, who will speak on "What's Happening in the Industry?"

Because of the interest of cattle feeders in the new developments in pelleting, members of the association are urged to bring feeders as guests.

POULTRY PRICES

(Countined from page 1)

prices, and by October prices were the second lowest since monthly estimates were begun in 1940.

Turkey slaughter, which is generally seasonally small the first half of each year, will be larger than usual in January-June, 1959. This is indicated by the large hatchings of poults in recent months and the continuing large supplies of hatching eggs, which will increase hatchings in the next few months, and will increase slaughter in early 1959.

After August or September egg production will increasingly reflect the number of replacements to be raised in the spring of 1959. Even if moderately fewer replacement chickens are raised in 1959 than the 436 million of 1958, increases in rate of lay per bird are likely to offset the effects of smaller numbers of layers.

Egg prices in 1959 probably will average below 1958. The decrease will be largest in the first half of the year when the increase in production will be largest. Prices will rise relative to a year earlier in the second half of 1959 when the increase in production over the same period of 1958 is likely to be small. In the final quarter of 1959, prices may be above a year earlier. Expected increases in egg production will not be great enough markedly to raise per capita egg supplies.

ILLINOIS

(Continued from page 6)

cessful operation of any business. Certain employees perhaps do not realize they are responsible for good customer reactions, he said. These might include telephone operators, truck drivers and others. These people, whether or not they realize it, can leave a good or a bad opinion with the customer.

The key to successful merchandising, Mr. Benton said, is to do more for the patron than he does for you.

Employee Qualities

James H. Burrell, business management consultant, St. Louis, Mo., spoke on the subject of "Human Relations in Business." A sensible, successful employer wants and must have abilities in his employees if he wants to remain in a prosperous position, Mr. Burrell said. "He wants and he must have people who have: (1) ability to put through a job thoroughly; (2) ability to find a better way to do a job; (3) ability to see new work and do it; (4) ability to work with people; (5) ability for acquiring vision, and capacity of knowing more and more about the department and business with which they are connected; (6) ability to keep growing; (7) the courage of convictions; (8) loyalty, the greatest virtue of the world, on which all other virtues are based; (9) honesty, purpose, ambition within reasonable limits, cleanliness of character and a fine regard for human beings and human rights.

"All of these and many others are required to make up character in an individual."

Over 90 exhibitors made up the largest showing of feed and grain mill equipment, products and services ever held in conjunction with the IFA-IPHF convention. A. T. Myren, Faultless Milling Co., Springfield, was in charge of the exhibit spaces.

Three floor salesmen were selected to receive plaques for outstanding and courteous customer relations in the booths. These included Robert White, General Mills, Inc., Quincy, Ill.; Charles Taylor, The Vernon Co., Newton, Iowa, and Richard Little, Oyster Shell Products Co., Flossmoor, Ill.

Winner of the grand door prize, an airplane ticket for two to Nassau, was Charles Griffin, Kelley Feed & Grain Co., Vandalia, Ill.

TURKEYS COOK BETTER IF FED LARD

COLLEGE PARK, MD. — Adding 8% lard to turkey rations produces birds that cook to a rich, even brown and score high in all the characteristics that add up to high quality poultry meat, it has been found by U.S. Department of Agriculture home economics and poultry researchers. The findings were reported by the University of Maryland Agricultural Extension Service. The report pointed out that rubbing a turkey well with fat, or "larding" it, before putting it into the oven helps to produce a well-browned exterior with plenty of juice and flavor inside. In USDA tests at the Beltsville, Md., research center, lard-fed turkeys gained weight more quickly on the same amount of feed and had a smoother, plumper finish at marketing age than turkeys eating no added fat. After cooking, their meat was evaluated favorably for flavor, tenderness and juiciness. Mechanical measurements showed these birds to be just as tender and somewhat juicier than turkeys fed no lard.

SWINE CONFERENCE

(Continued from page 8)

Illinois swine extension specialist, in his discussion of management systems, suggested that the automatic "grinder-mixer" equipment and the blowers, augers and automatic unloading wagons make it possible to operate the "all-on-concrete" production system with a minimum of labor. However, the most difficult problem is that of cleaning and disposal of manure.

An Optimistic View

An Optimist's View—Dr. Earl L. Butz, dean of agriculture at Purdue, spoke at the noon luncheon on "An Optimist Looks at the Swine Industry." He told his audience that a 51% increase in the effective demand for pork and pork products over the next two decades is not beyond the realm of reasonable expectation. This increased demand is based on a growing population, rising income, lower selling price resulting from increased production efficiency, and the production of a superior product.

Dr. Butz said he believes that production costs for hogs will be lower as science moves rapidly into the hog lot, and that profit margins for good producers will be wider than normal because of decreasing production costs accompanied by an expanding market.

The rise in volume necessary to meet the expanding market will benefit processors and distributors through a larger and more constant flow of pork to market. He further concluded that the rising volume and lower relative prices will obviously benefit the consumer.

Consumers' Market

Henry Eavey, president of the Supermarket Institute, suggested consideration of five basic points in order to increase the consumption of pork products. He proposed (1) maintenance of quality, (2) the development of leaner hogs, (3) the development of a relatively stable supply system, (4) the education of consumers to the inherent nutritional value of pork, and (5) the aggressive merchandising of pork by supermarket operators. He further said that consumers are seriously objecting to excess fat, off flavor and the radical changes in the price of pork as indicated by a 16-market-area survey.

Merchandising, Marketing

John R. Jones, Geo. A. Hormel & Co., and head of the American Meat Institute's provisions committee, expressed the belief that individual meat packers are moving to hog buying programs on a merit basis. He estimated that within 10 years 90% of the hogs raised in this country will be marketed in a manner to reflect value differences.

Dr. Clifton B. Cox, Purdue marketing specialist, anticipates major changes in hog marketing in the future. He suggested a series of analyses be made to see how the market itself, along with its services, can be improved to more efficiently move hogs from farms to slaughter. Dr. Cox believes that the type of hog market that will dominate the future will be that one that can offer the best services desired by the farmer in relation to costs for those services.

Pork's "Plus" Values

Plus Values: Following a pork dinner, Carl F. Neumann, manager of the National Livestock & Meat Board, related "The Plus Values in Pork" by dramatic and graphic comparisons of pork with other foods. Mr. Neumann told his listeners that it would take 16 slices of bread to provide as much thiamine as a pork chop; 17 bowls of cereal to provide as much protein as a pork chop, and 15 servings of spinach to provide as much iron as a serving of pork livers. He further pointed out that pork is the strongest source of thiamine and urged those in attendance to assist in educating the consumers to the inherent nutritional value of pork.

PORK "HAMBURGER" — Shown is the porklet, introduced at the noon luncheon of the recent National Swine Industry Conference at Purdue University. To make a porklet, slices from the Boston butt are processed in a mechanical device such as the machines used to make minute steaks. The porklet is 4 in. square and weighs 4 oz. uncooked. It was developed and tested by home economists of the National Livestock & Meat Board, and has been called the swine industry's answer to the hamburger.

MARKETS

(Continued from page 2)

the Christmas season birds being fattened. Dairy and broiler feeds are selling well, but not spectacularly.

Those manufacturers reporting slower business note that higher price trends together with strong buying of recent weeks which has probably filled up the pipelines are contributing to the slow-down. Business is still considered good. And an improvement is considered likely to come along with a break in the balmy fall weather.

Prices are expected to be unchanged to up $1, depending on the formula. Millfeeds are stronger and oilseed meal is also firmer.

Northeast

Higher ingredient prices and improved export prospects abruptly reversed a decline in formula feed sales. Mills stepped up their running time a little to cope with the increased demand.

Sentiment was said to be bolstered by President Eisenhower's Seattle speech which indicated expanded foreign aid.

Offerings of new crop corn and soybeans were not too plentiful and consumers thought this was a good time to build up their inventories.

Egg mashes continued in the role of sales leaders. But dairy feeds have held up surprisingly well in the face of a lot of afterfeed in the fields. Concentrates to mix with grain on the farm contributed heavily to the dairy feed turnover. Broiler feeds dragged, especially in the western New York area. Slaughtering has left quite a hole in turkey feed volume.

Milk continues to hold up. But eggs were weaker and the market has seen its top prices for some time to come. Broiler prices in the East held steady at the practically profitless level of 15@15½¢ lb.

Ingredient prices were quite strong during the week.

Corn was up 3¢; oats up 1½ to 2¢, especially for the better grades; feed wheat gained 2¢ and barley held steady.

Soybean oil meal (44%) jumped $7. The leap wasn't quite as much on the 50% meal but prices were up $5 to $6. Linseed oil meal, which has been

INDUSTRY DEMANDED IT--
B&L DELIVERED IT
STANDARD EQUIPMENT ON THE
B&L FORMULA FEED BLENDER
THE FIRST PRACTICAL BALED HAY GRINDER
GRINDS ROUND & SQUARE BALES
WITH EQUAL EASE
FARM FRESH
FORMULA
● GRINDS WHOLE BALES WITH NO EFFORT
● LARGE FEED TABLE—30" ABOVE GROUND
● POWER DRIVEN GATHERING FINGERS
● VARI-SPEED FEED DRIVE
● COMPLETELY ENCLOSED WHEN NOT IN USE
● NO EXTRA POWER NEEDED
● UTILIZES FULLEST EQUIPMENT EFFICIENCY
GET THE COMPLETE STORY
Ask For FREE Catalog PFB-158
B&L
BARNARD & LEAS
Manufacturing Company INC.
1200-34 Twelfth St., S.W.
Cedar Rapids, Iowa

stable for quite a while, shot up $4 to $5 and is practically unobtainable Gluten meal held steady and cottonseed oil meal turned higher.

Fish meal continued very strong, scarce and up $3. Meat scraps were weak and down $5 in a surprising move in view of the strength in soybeans.

Millfeed prices jumped in a "wild" market on exceptionally thin supplies.

Running time of formula feed manufacturers rose to 40 hours from 36 in the previous week.

Southeast

Demand was reported to be good for most types of mixed feeds this week. Broiler markets now stand at 16¢ lb. f.o.b. farms, a 1¢ lb. increase from recent low, and baby chick placements for the latest reporting period are slightly higher than for the previous period.

Dairy feed demand is better and the colder the weather, the better this demand is expected to be. So far, only the northern part of our territory has had any frost, with temperatures holding well above the freezing level over the southern part.

Hog feeds are moving well, although considerable corn and other home-grown materials are being utilized wherever possible. Feeder cattle operators still report more cattle on feed at this time than had originally been expected several months ago. Demand from this segment of the industry has held above earlier expectations.

Feed mill running time is reported to be fair to good, with feed prices steady to slightly higher. Higher priced protein meals have been partly offset by lower prices on shell corn. Midwestern corn is beginning to move into the territory, both by barge and in truck load lots. Delivered prices are such that locally produced corn is now out of line insofar as asking prices f.o.b. producing points are concerned.

New crop citrus pulp production has begun in Florida in a very limited way, but significant tonnage is still about a month away, according to most reports. According to purchasing agents for most feed manufacturers, inventories of raw materials are on the limited side and, with bumper supplies of most all ingredients, the general practice is to follow a hand-to-mouth policy, with the hope that prices will decline to year's recent lows before markets begin to advance.

Ohio Valley

Sharply colder weather this week failed to provide any appreciable increase in sales of formula feeds, and tonnages continued at about the level recorded during recent weeks, despite increased prices of soybean and cottonseed oil meals, hominy feed, millfeeds and some other ingredients.

With plentiful supplies of farm crops available, farmers appear to have adopted a wait-and-see position, in the belief that downward price adjustments will develop.

One exception to the static demand was noted for hog feeds, which recorded an increased volume of sales. Otherwise, operations held steady on a five-day basis at most valley plants.

Mountain States

The volume of manufactured feed has been more active in the past week than in the past two months, primarily in the cattle feed range and the feed lot fields. This business is about the same as a year ago with a slight increase due to the build up of feed lots.

Most demands for feed have been for cattle and poultry. Demand has been pretty steady all along this year the same as last year. Prices have been holding their own.

Most of the feed is being purchased by dealers for immediate sale, not so much for inventory build-up. According to those reporting in this area, prices are expected to remain the same for the coming week.

Central States

A general slowdown in formula feed business developed during the week ending Nov. 12, and many observers feel this reflects some resistance to climbing prices.

November is expected to be a fair month, but the pressure of rising ingredient prices, particularly vegetable proteins, which in turn produced mixed feed increases of around $5 ton this week, will produce a handicap, observers say. At a time when an abundant harvest was expected to produce lower quotations, it is believed the unexpected upturns are causing buyers all along the pipeline to play it close to the belt.

Bookings of cattle feed have not lived up to expectations, and some mills have extended their booking period. Feed men point to the large number of livestock on feed and the growing number of consumers, however, and indicate they believe the lull is temporary. Mills are grinding on a full schedule, but backlogs are slender.

Pacific Northwest

Feed ingredient prices strengthened further during the past week in the face of a moderately active demand.

Greatest price gains were posted by oilseed meals and molasses dried beet pulp while wheat millfeeds sold unchanged to 50¢ ton higher than one week earlier.

Soybean meal listings increased by $3 ton while copra meal closed $2.50 ton higher with linseed meal and molasses beet pulp up $2 at the close. Cottonseed meal tags gained $2 a ton during the trading period.

Feed grain prices managed to hold unchanged except for a 50¢ advance for corn.

Meat and bone meal prices declined very sharply due to seasonally larger offerings and a slow demand.

Oregon and Washington dairy feed movement showed a slight seasonal increase, representatives reported, while pointing out that formula feed trading was seasonally good with egg and broiler mashes setting the pace.

North Portland livestock market fed steer prices held steady for all grades with choice ones topping the market at $27-28 a hundredweight.

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Abbott Laboratories 52, 53
Agricon, Inc. 103
Agri-Tech, Inc. .....
Albers Milling Co. .....
Albumina Supply Co. 82
Allied Chemical Corporation, Nitrogen Division .....
Allied Mills, Inc. .....
Amburgo Co., Inc. .....
American Agri. Chemical Co.
American Cyanamid Co. 62, 63
American Dehydrators Assn...
American Elev. & Grain Div.
American Mill Serv. Co. ...
American Poultry & Hatchery Fed. .....
Anderson Box Co. 101
Andersons, The .....
Anderson, V. D., Co. 104
Arbor Acres Farm 15
Archer-Daniels-Midland Co. ..
Arkansas Rice Growers Coop. Assn. .....
Arkell & Smiths .....
Armour & Co. 70
Armstrong, O. B., & Son ...
Aubrey Feed Mills 92

Babcock Poultry Farm, Inc. ..
Bacon, Edward R., Grain Co..
Baker, H. J., & Bro. .....
Baker, J. T., Chem. Co. ...
Barnard & Leas Mfg. Co., Inc. 114
Baroid Division, National Lead Co. .....
Bartlett, C. O., & Snow Co... 40
Barton Salt Co., The 88
Bates Grain Co. .....
Baughman Mfg. Co., Inc. ...
Baxter, A. E., Engineering Co.
Bayou Molasses .....
Beardstown Mills .....
Bemis Bro. Bag Co. 81
Berg, Paul .....
Bigelow Sales Co. .....
Bingman Lab., Inc. 102
Black, Sivalls & Bryson, Inc...
Blatchford Calf Meal Co. 98
Blomfield-Swanson .....
Borden Company 23
Bosworth Commission Co. ....
Bowman Feed Prod., Inc. ... 72
Brewers Yeast Council, Inc..
Brower Manufacturing Co. .. 42
Brown, Fred G., Pulv. Co. ..
Bruce Milling Co. .....
Burrell, James H., & Co., Inc. 87
Burrows Equipment Co. 14
Burrus Feed Mills .....
Butler Chemical Co. 59
Butler Mfg. Co. 69

C-K Processing Co. .....
Calcium Carbonate Co. .....
California Pellet Mill Co. ...
Caple, A. B., Co. .....
Carey Grain Corp. .....
Cargill, Inc. 95
Carson Food Co. .....
Champion Portable Mill Co...
Chantland Mfg. Co. 50
Chase Bag Co. 24
Checkerboard Grain Co. 90
Citrus Processors Assn. .....
Cleveland Vibrator Co., The.. 44
Clinton Corn Processing Co. .
Clofine, Herbert K. 79
Colby Milling, Inc. 22
Collier Livestock-Feeder Co...
Colonial Poultry Farms .....
Columbia Phosphate Co. 60
Columbia Quarry Co. 40
Columbian Steel Tank Co. ..
Commercial Solvents Corp. 5
Consolidated Blenders, Inc. .. 111
Consumers Soybean Mills ....
Continental Grain Co. 111
Corn Products Sales Co. 39
Coronet Phosphate Co. ...66, 67
Cottingham & Butler Ins. Service, Inc. 14
Creta Mills .....
Cromwell Paper Co. 98
Crown Zellerbach Corp. 50

D. C. A. & Co. .....
Daffin Mfg. Co. .....
Dannen Mills, Inc. 70
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc. ...17, 97
Day Company, The .....
Daycom, Inc. 90
Delaware Poultry Laboratories
Devold, Peder, Oil Co. 37
Diamond V Mills, Inc. .....
Distillation Products Industries 43
Distillers Feed Research Council .....
Doane Agricultural Service .. 68
Doane Feed Products Co. ....
Dorn & Mitchell .....
Dorsey Trailers .....
Doty Laboratories .....
Douglas Chemical Co. .....
Duplex Mill & Mfg. Co. 85

Du Pont de Nemours & Co., Inc., E. I. 9, 78

Early & Daniel Co. 99
Eastman Chemical Prod., Inc.
Ehrsam, J. B., & Sons Mfg. Co., The .....
Elam Grain Co. .....
Eriez Mfg. Co. .....
Eschenheimer, Rudy, Co. ....
Eshelman, John W., & Sons..
Ewing, Ray, Co. 91

Farm Journal .....
Farmers Friend Mineral Co... 82
Farmers Mutual Hail Ins. Co. of Iowa .....
Farmers Union Grain Terminal Assn. 16
Feed Service Corp. .....
Fischbein, Dave, Co. .....
Flavor Corp. of America... 107
Flour Mills of America ....
Food Mach. & Chem. Corp...
Forster Mfg. Co. 71
Fox Co. 50
Fruen Milling Co. 7

Gaddis Bros. Mfg. Co. .....
Geerlings Feed Mills .....
Gerber Sheet Metal .....
Glidden Co., The .....
Gorton-Pew Fisheries 112
Grace Chemical Co. .....
Grain Processing Corp. 100
Grand River Chem. .....
Griffith Labs., Inc. .....
Gump, B. F., Co. .....

Hallet & Carey Co. .....
Hand, Peter, Foundation 3
Hardy, H. E., & Co. .....
Hardy Salt Co. .....
Harris-Crane, Inc. .....
Harshaw Chemical Co. .....
Hawthorne Co. .....
Hayes and Stolz .....
Haynie Menhaden Prod., Inc. 95
Heard-Kinard-Smith, Inc. ... 80
Heck, Edward J., & Sons Co.
Heil Co., The .....
Helm Manufacturing Co. ....
Henderson Mfg. Co. .....
Henke Mfg. Co. .....
Hercules Powder Co. 74
Hess & Clark, Inc. 93
Heterochemical Corp. 99
Highway Equipment Co. 72
Hilltop Laboratories .....
Hoffmann-La Roche, Inc. ....
Hoffman-Taff, Inc. 94
Hogenson Const. Co. .....
Hogg, N. D., Ltd. .....
Holt Products Co. .....
Homer Mfg. Co., Inc., The..
Honeggers & Co. 87
Honeymead Products Co. ....
Hot Spot Detectors, Inc. ....
Howes, S., Co., Inc. .....
Hubbard Milling Co. .....
Hudson Pulp & Paper .....
Hubbell, Charles H. .....
Hygeno Litter Co. .....
Hyline Poultry Farms .....

Ibberson, T. E., Co. .....
Illinois Soy Products Co. ...
Industrial Commodity Corp..
International Machinery Dev. Corp. .....
International Minerals & Chemical Corp. 57
International Paper Co. 20
International Salt Co., Inc..
Interstate Chemical Products.
Iowa Limestone Co. .....
Iowa Portable Mill Co. .....

Jackson, Gilbert, Co., Inc...
Jacobson Machine Works ... 37
James Mfg. Co. .....
Jefferson Chemical Co. .....
Jersee Co. 52
Johns-Manville .....
Jones-Hettelsater Const. Co...

Kansas Soya Prod. Co., Inc...
Kees & Company 86
Kellogg, Spencer, & Sons, Inc. 37
Kem Mfg. Co. .....
Kemp, C. M., Mfg. Co. .....
Kent Feeds .....
Kent, Percy, Bag Co., Inc... 96
Key Alfalfa Dehydrators ....
Keystone Steel & Wire Co. ...
Kilby Steel Co. 79
Kindstrom-Schmoll Co. .....
Koelsch, Charles J., Grain Co.
Koppers Co., Inc. .....
Kraft Bag Corp. 75
Kraft Foods Co. 60, 61, 96
Kuss, R. L., & Co., Inc. 102

Laboratory Construction Co...
LaBudde Feed & Grain Co... 91
Lakeland Eng. Eqpt. Co. ...
Land O'Lakes Creameries, Inc.
Landers Mill Mfg. Co. .....
Lathrop's Hatchery, Inc. ....
Lauhoff Grain Co. 86
Leach Mfg. Co. .....
Leftwich, J. H., & Co., Inc... 92
LeGear, Dr., Inc. 56
Lennox Industries, Inc. .....
Levens Mfg. Co. .....
Lilly, Eli, & Co. 77
Lima Armature Works .....
Limestone Products Corp. of America 49
Loncala Phosphate Co. .....
Longhorn Eng. Co. .....

McCabe Grain Co., Ltd. 19
McCall, Tom, & Associates, Inc. .....
Magnus, Mabee & Reynard..
Maney Bros. Mill & Elev. Co. 4, 112
Manganese Chemical Corp. ..
Marco Chemical Co. 15
Martenis, C. J., Grain Co....
Martin, Theo. W., & Son ...
Mathews Co. .....
Mayo Shell Corp. 88
Merchants Chemical Co., Inc.
Merck & Co. .....
Mid-America Mfg. Co. .....
Mid-Continent Grain Co. 52
Midland Western 111
Midwest Alfalfa Co. 58
Mid-West Business Exchange.. 106
Midwest Dried Milk Co. ....
Milbrew Co. .....
Mill & Elevator Co. .....
Miller Manufacturing Co. ...
Miller, Mel, & Co., Inc. ....
Miller Publishing Co., The ...
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. .. 94
Minnesota Specialty Co., Inc.
Monsanto Chemical Co. .....
Mooers Mfg. Co. .....
Motomco, Inc. .....
Morton Salt Co. 105
Murphy Products Co. .....
Myers-Sherman Co. 86

Nagel, Herman, Co. 95
Natl. Alfalfa Dehydrating & Mlg. Co. 116
Natl. Distillers Prod. Co. 56
National Feed Ingred. Assn...
National Lead Co. .....
National Molasses Co. 103
National Renderers Assn. 60
National Turkey Federation Underwriters .....
National Vitamin Products Co.
Nellis Feed Co. 58
New Century Co., The .....
New England By-Prod. Corp.. 112
Nichols, Incorporated .....
Nootbaar, H. V., & Co. ....
Nopco Chemical Co. 12, 13
North American Mfg. Co. ... 11
North American Trading & Import Co. .....
North Carolina Granite Corp. 21
Northwest Brewers Yeast, Inc.
Nor-Vell, Inc. .....
Nutrena Mills, Inc. 95

Oakes Mfg. Co. .....
Olavarria & Co., Inc. .....
Oyster Shell Corp. 18
Oyster Shell Prod. Co. 80

Pabst Brewing Co. .....
Panogen, Inc. .....
Paper-Calmenson & Co. .....
Park, Philip R., Inc. .....
Parks, J. P., Co. 7
Parrish & Heimbecker 49
Parrish, N. K. .....
Paxton Processing Co. 111
Pay Way Feed Mills, Inc. ...
Peavey, F. H., & Co. 99
Peerless Equip. Co., Inc. ...
Permco Mfg. Co. .....
Peterson Sales, Inc. 79
Pfizer, Chas., & Co. 45-48
Phelps Dodge Refining Corp.
Pillsbury Co., The 103
Pittsburgh Plate Glass Co. ...
Pless & Sheahan 69
Power Curve Conveyor Co...
Prater Pulverizer Co. 82
Pratt Labs., Inc. .....
Productive Acres Mfg. Co... 49
Publicker Industries, Inc. 41

Quaker Oats Co. 83
Quisenberry Mills .....

Ralston Purina Co. .....
Ranger Equipment Co. .....
Rapids Machinery Co. 92
Raymond Bag Corporation 89
Read, Gladwin A., Co. .....
Red River Alfalfa Co. .....
Red Star Yeast & Prod. Co.. 87
Rees Blow Pipe Mfg. Co. ...
Reliance Feed Co. .....
Rhodia, Inc. .....
Richardson, James, & Sons ..
Richardson Scale Co. .....
Riley Feed Co. .....
Rion Crush Stone Corp. 91
Ripco, Inc. .....
River Rest Turkey Sales, Inc.
Robinson Conveyor Systems..
Rohloff Bros., Inc. 98
Rolfes Grain Aeration Cos...
Roskamp Huller Mfg. Co., Inc.
Ross Machine & Mill Supply..
Ryde & Co. .....

S. & H. Lab. 102
S & O Products .....
St. Regis Paper Co. .....
Salsbury's, Dr., Labs. 25-36
Save-Way Feed Mills .....
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. 64
Schuster-Wise Gr. & Feed Co.
Schutte Pulverizer Co., Inc...
Scroggins Grain Co. 60
Seagram, Joseph E., & Sons, Inc. .....
Seco, Inc. .....
Sedberry, J. B., Inc. 101
Seedburo Equipment Co...61, 102
Service Bureau Corp. .....
Sheahan, Robert F. 69
Shell Chemical Co. .....
Shellbuilder Co. 24
Shuford, J. C. .....
Sievert, C. W., & Associates
Simonsen Mfg. Co. .....
Sioux Products .....
Small, The W. J., Co. 4
Smith, Edward E., & Co. 24
Soft Phosphate Research Inst.
Sohio Chemical Co. .....
Soluble Nutrients, Inc. .....
Southwest Mill Supply Co. ..
Sparks-Waters-Farnen, Inc. ...
Special Products, Inc. .....
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc. 37
Sprout, Waldron & Co., Inc. 18, 19
Squibb, E. R., & Sons .....
Stabilized Vitamins, Inc. ....
Staley, A. E., Mfg. Co. 90
Staley Milling Co. .....
Standard Brands, Inc...22, 79, 82
Standard Feed & Fert., Inc...
Stauffer Chemical Co. .....
Stephens-Adamson Mfg. Co...
Sterwin Chemicals Inc. .....
Stone Mountain Grit Co. ..54, 55
Strong-Scott Mfg. Co. 95
Sudanga Industries .....
Sunset Feed & Grain Co. 75
Superior Feed Co. .....
Swanson, Carroll, Sales Co... 53
Swift & Co. .....
Syntha Lab. .....

T. D. F. Company .....
Taste Engineering, Inc. .....
Texas Mill Equipment Co. ...
Thayer Scale Corp. 65
Thomer Equipment Co. .....
Thompson Printing Co. .....
Ti-Co Industries 112
Tobias Enterprises 53
Toxite Laboratories 101
Truck Grain Blower Co. ....

Ultra-Life Laboratories, Inc... 19
Union Bag-Camp Paper Corp.
Union Special Machine Co...
U. S. Industrial Chem. Co. ..
Universal Hoist Co. .....
Upjohn Company, The .....

Van Dusen Harrington Co. ... 99
Vantress, Chas., Farms, Inc... 51
Vitamins, Inc. 40
Vitaway, Inc. .....
Vitron Corp. .....
Vy Lactos Laboratories, Inc...

W-W Grinder Corporation .. 104
Wallace & Tiernan Inc. 22
Warren-Douglas Chemical Co.
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. 58
Wertz Feed Co. .....
Western Condensing Co. .....
Western Yeast Co. 103
West Virginia Pulp & Paper Co. .....
White Laboratories, Inc. 73
White Shell Corp. .....
Whitmoyer Laboratories, Inc.. 104
Whittan Co. .....
Wilhoit Laboratory .....
Wilson & Co., Inc. .....
Wilson, R. S., Co. .....
Wirthmore Feeds 44
Wisconsin Alumni Research Foundation .....
Woodward & Dickerson, Inc..

Younglove Construction Co...
Young, John F., Co. 78

Zellers' Laboratories .....

the year around

you can get premium quality dehydrated

alfalfa

from NATIONAL

WORLD'S LARGEST ALFALFA DEHYDRATORS

Strategically located dehydrating and terminal facilities with huge gas storage capacity assure you a uniform supply of quality dehydrated alfalfa products, whatever the season.

NATIONAL ALFALFA DEHYDRATING & MILLING CO.

Gen'l. Sales Offices: Board of Trade Building, Kansas City, Mo.